

# reconnect **recalibrate** March 1-4



#### ABSTRACT REVIEW COORDINATOR Tina Patel

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#### 2022 CREATIVE SCHOLARSHIP AWARDS

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#### 2022 IDEC AWARDS OF EXCELLENCE

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Slow Interiors Manifesto: A Renewed Framing of Interiors

#### **Best Presentation – Scholarship of Teaching & Learning**

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#### **Best Poster Presentation**

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### A Sustainable, Just, and Transformative Future for Publishing Interior Design Scholarship

Bryan Orthel, Indiana University Paramita Atmodiwirjo, Universitas Indonesia Joan Dickinson, Radford University Upali Nanda, HKS Olivier Vallerand, University de Montreal Lois Weinthal, Ryerson University

#### ABSTRACT

RELEVANCE/PROBLEM: Publication of interior design scholarship faces vexing issues: current academic publishing models are financially unsustainable (Siler, 2017) and knowledge transmission and uses are altering what and how we publish. Access to information is an essential human right and public good that cannot be restricted by subscription or paywall (e.g., UN Declaration of Human Rights; SPARC). Nevertheless, the publishing market values speed and profit over the development of new knowledge as five publishers handle 70% or more of journal articles each year (Larivière et al., 2015)—even though knowledge is increasingly recognized as collective and emerging (Mendoza, 2008). Perceptions and use of interior design scholarship vary between educators, students, and professionals (Dickinson et al., 2012; Huber, 2018). Interior design educators may be required or expected to develop meaningful scholarship, but academic policies and publishing models hinder change, diversity, inclusion, and equity in publishing. This panel is composed of journal editors and scholars engaged in asking questions about the dissemination of interior design scholarship, and includes individuals who challenge hegemonic and colonial disciplinary viewpoints. How should interior design scholarship and academic publishing shift to be sustainable, just, and transformative? CONTEXT: Discussions about interior design's body of knowledge and scholarship during the 1980s, 1990s, and 2000s revealed the continued professionalization of the discipline and profession, and positioned

researchers to reshape how interior design affects users. Attempts to link scholarship across the discipline and profession expanded the reach of information (e.g., InformeDesign, HERD Journal). Research and scholarship has become more relevant to practicing professionals, and is increasingly produced and published by design firms. At the same time, the means and methods of producing and publishing scholarship in academia have shifted. In particular, the communication of scholarship via journals, books, and industry media through openly-available platforms requires us to look carefully at what we do. Interior design scholars should proactively examine how we publish scholarship so we provide useful, ethical, and just access to interior design knowledge. METHOD: A series of questions and audience engagement will balance the expertise of the panel with the knowledge and experience of audience members. The panel is convened with the understanding that knowledge about interior design's scholarship is emergent from the discipline, rather than held and guarded by gatekeepers. The panelists' diverse perspectives, experiences, and identities reflect contemporary interior design scholarship. The panelists will address questions about changing perceptions of scholarship, Open Access publication and collaboration networks, evolving publication and review standards, and DEI issues in publishing. OUTCOMES: The panel's goal is to facilitate a conversation about how IDEC and the Journal of Interior Design support and advance the discipline's scholarship needs. A robust discussion will establish strengths, emphasize changes that must be immediately addressed, and reveal long-term concerns to explore. The discussion should prompt academic debate, policy revision, and behavior change among scholars, educators, and volunteer leaders. For much of its existence, interior design has been fiercely (and appropriately) defended and guarded as an emerging discipline. Interior design provides an interdisciplinary gathering point with a unique and specific focus for essential and critical consideration of interior spaces for humanity. At the same time, the interior design discipline remains a largely homogenous group continuing to protect its boundaries. To be sustainable, just, and transformative, the discipline must question these boundaries and how we publish and disseminate scholarship.

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Scholarship of Design Research | Open Track | Panel

### Testing the Resiliency of the Interior Design Faculty Position: Cost, Cliffs, COVID, Climate, and Culture

Amy Roehl, Texas Christian University Laura Kimball, Radford University Heidi Plumb, Ensign College Beth Miller, Mississippi State University Doug Seidler, Marymount University Jane Kucko, University of Tulsa (Retired)

#### ABSTRACT

Full-time faculty are essential to the success of academic units. Over the past two decades, the academic discipline of Interior Design faced enduring challenges in finding credentialed applicants for open positions, often resulting in failed searches (IDEC, 2007). It is not surprising according to a 2020 survey of 175 interior design programs, that the average faculty includes only 4 full-time positions, smaller programs averaging 2.67 and some lacking even one full-time instructor (CIDA, 2020). Pre-pandemic, Interior Design programs faced chronic understaffing and despite continuing need, the resiliency of these positions is continuously tested. While moving to remote learning in March of 2020 universities instituted sweeping budget cuts and froze assets including the termination of in-progress faculty searches (Hubler, 2020). It is unclear whether or not cancelled searches will ever be re-established. This panel discussion focuses upon the enduring topic of the deficit in full-time interior design faculty by exploring influences impacting faculty hires many of which were either veiled, exposed, or exacerbated by the pandemic. Representing a range of institution types and sizes, the panel is made up of a variety of experienced academic leaders with a record of successfully advocating for their programs. These leaders will provide insight about how we might progress despite significant adverse situations. Key issues include costs: actual and opportunity, the enrollment "cliff", residual

implications resulting from the pandemic, climate, culture and the institution. Considerations to be Explored in this Panel Discussion: I. Costs: Actual and Opportunity Costs Drastic budget reductions include removal of faculty lines. Opportunity costs reflect loss of potential gain when one alternative is chosen over another.  $\Box$  How do you foresee programs handling gaps in full time faculty? If human resources are not secured what are other possible tactics such as curriculum changes, possible curriculum sharing between institutions, and/or program offering reductions (i.e. do less, offer less)? 
In communications with other North American academic colleagues, can you gauge the temperature around the future of the tenure-track position?  $\Box$ Considering increased teaching and service loads might full time faculty be evaluated differently for merit and/or promotion in the future? II. The Enrollment "Cliff" The "cliff" refers to decreased birthrates in the U.S. resulting from the 2008 recession (Kline, 2019). Interior Design programs might find themselves in a unique position in the projected student enrollment downturn, that of either stable or increasing matriculation in the major.  $\Box$  What are you hearing about enrollment trends for interior design majors across North America? strategies your program employs for managing majors and will those tactics shift or change based upon the need to reduce, increase or stabilize student numbers? III. Residual Implications from the COVID Pandemic Re-prioritization of personal values marks the "great resignation" where people seek change toward individual happiness (Hsu, 2021). For active faculty searches, what does the prospective pool look like in light of personal re-prioritization and the recent postshelter-in-place industry boom? IV. Institutional Climate and Culture Culture wars fuel on-going political unrest and climate-related disasters spare no region of the country. The debate over higher education's price tag and value is magnified. How might culture and climate (institutional and regional) influence future faculty hires? In what ways might the higher education model evolve and how might the full time faculty position as we know it change in a new model?

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### Connect, Communicate, Create: An Allied and Future Vision in Professional Development for Design Academics

Marlo Ransdell, Florida State University Rene King, Columbia College Chicago Laura Morthland, Southern Illinois University Chasen Bloch, Florida State University

#### ABSTRACT

As design educators, we seek to engage students in experiential learning that promotes critical and creative thinking through diverse projects. We also seek to engage student growth via internships and study abroad opportunities and actively encourage creative risk taking when possible. Many of our teaching methods are rooted in constructivist methods and are interactive, particularly within the studio environment. However, most professional development and continuing education models for enrichment follow a behaviorist model of information delivery and extrinsic motivation that does not reflect the level of engagement and self-direction that we promote as design educators. This can be particularly acute with online continuing education courses [CEUs] that are often created at the macro level for mass consumption and not individual interaction. In contrast, academics in allied creative fields such as art, theater, and dance regularly attend summer residencies as a means of focused professional and career development (Dawson & Kelin, 2014). Residencies can offer dedicated time to further individual creative projects and research agendas over an extended period within a supportive environment and community of practice (Elfving, Kokko & Gielen, 2019). The focus of this teaching and learning panel is an exploration into connecting, communicating, and creating within a virtual design residency program that mitigates travel and provides access for all. This model could open the avenue for a myriad of immersive and individualized professional development opportunities which successfully impact teaching, research, and service for design educators. A virtual

residency program (name withheld for review) for design and design-related academics interested in digital fabrication prototyping was conceived and pilot tested over the spring and summer of 2021. The goals were to provide a supportive community, expert guidance, and remote access to digital fabrication equipment for creative and research related projects; all of which were not readily available to participants in their home locations. Applications were accepted online for six weeks during March and April, and follow-up virtual interviews with all applicants took place over two weeks in May. Of the 16 applications, four were deemed appropriate in scale, scope, and need for the pilot program. The participants represented interior design, product design, visual art, and dance and were located in Florida, Ohio, Illinois, and Argentina (see appendix page 1). Each participant received a mailed "welcome package" that included samples of materials available for projects along with fabrication examples from the machines available (see appendix page 2). Weekly meetings and mailing of process work were facilitated by the program lead and assistant, and took place over eight weeks in June and July at the participants' convenience. The overall budget for the project was minimal at \$6000; this covered modest salaries for staff, appropriate stipends for participants, and all material and mailing costs. This convergence of digital software, machines, and the creative person happened daily over the two-month span and drove the residency trajectory during the summer of 2021. The panel will focus on two key themes: 1) logistics of program organization and 2) experiences of participants (see appendix page 3 &4). Discussions will uncover the lessons learned in the organization and administration process of the summer program, along with the future vision for the virtual residency program. Participants will introduce their self-directed projects and discuss how engaging in a focused virtual residency program impacted professional development in teaching, research, and service in a meaningful way.

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#### Figure 1.1 Community of Practice



### COMMUNITY OF PRACTICE

Domain of Interest Community Hub Practice Figure 1.2 Community Connections



#### LEGEND

••

| •••• | shared practice overlaps                           |
|------|--|
|      | Continued interaction beyond summer                |
|      | Zoom meeting overlaps                              |
|      | oversight of fabrication labs at home institutions |

IDEATE >>>> CRITIQUE >>>> FABRICATE <<<< ASSEMBLE <<<< CRIITIQUE <>>> CRITIQUE >>>> FABRICATE <<<< CRIITIQUE



**Material Options** laser cutter



**Material Options** box with CNC joinery options



**Scholar Ideation** iterations emailed to community hub for fabrication + feedback



**Fabrication + Shipping** iterations shipped to scholars for assembly +



**SCHOLAR 1** industrial designer joinery + furniture south america

1

1-III







Figure 1.4 Scholar 1

SCHOLAR 2 theater + dance furniture midwest



Figure 1.5 Scholar 2



SCHOLAR 3 interior designer pattern + weaving . midwest





**SCHOLAR 4** interior designer pattern + light midwest







Figure 1.6 Scholar 3



Figure 1.7 Scholar 4



# 20 | 20

### Generation Scrap: Designing the Future with Waste

Rebekah Matheny, Ohio State University Royce Epstein, Mohawk Group

#### ABSTRACT

INTRODUCTION: Living in a world that generates more waste than it recycles, Generation Scrap explores Gen Z's mindsets and design solutions for the global climate crisis. Through a collaboration between an interior materials course and an international carpet manufacturer recognized as a leader in sustainability, students research and identify sustainability challenges impacting their generation to develop macro design trends. Collaborating with the manufacturer's experts in trend forecasting, design, manufacturing, and sustainability, students then translate their trend forecast into a speculative carpet design. From ocean plastic to fast fashion waste and even climate refugees, topics addressed circular design with a real-world understanding to develop innovative carpet design solutions that positively impact the natural environment and the human experience. This partnership project highlights the importance of collaboration between educational institutions and industry to create designs that support the growing demands and values of Gen Z. CONTEXT: Pollution, overpopulation, loss of natural resources, and an abundance of waste impact the planet and people in devastating ways. Acutely aware that they are living in the Anthropocene, the era defined by human's effect on the earth, Gen Z is driven by their ethical responsibility toward environmental and social sustainability, focusing heavily on a company's purpose towards environmental and social impact (MLSGroup, 2014). If the Oxford Dictionary defines "Pop Culture" as "modern popular culture aimed particularly at younger people" (2021), one might define this current Anthropocene moment amongst Gen Z, that of grappling with society's abundance of waste with the aspiration to reduce their ecological footprint, as "Scrap Culture" and this youth generation as "Generation Scrap." PROJECT: Generation Scrap asks students to develop a trend forecast report positioning

sustainability alongside societal issues, conceptualizing a future that is both environmentally and socially sustainable. Students begin by research scrap culture to understand how various industries address waste. Developing their trend forecast, students look at the world through their own lens, addressing social movements, art, fashion, and technology to predict the future of design. Applying their forecast, students design a speculative carpet for a commercial application that would positively impact the natural environment and the human experience of built space. Addressing product longevity, designs must be durable and circular. As a theoretical project, students propose designs that create a meaningful dialogue between industry, craft, sustainability, and social challenges. From proposals of new carpet fibers or backing solutions created from agricultural, industrial, and consumer waste to new biophilic patterns or industry collaborations, this project demonstrates the ingenuity and creative problem-solving of Gen Z. OUTCOMES: Juried by the manufacturer, three projects per year since 2018 have been awarded scholarships, presented to design professionals, and been featured in the manufacturer's marketing materials. This level of industry exposure reinforces the significance of collaborations between academia and industry to create designs that emotionally connect to end-users who demand sustainable products in the marketplace. By incorporating projects like this into our curriculums, design can make a tangible impact on the environment. Investing in this project, the manufacturer believes in inspiring the next generation of designers to tackle the dire environmental and social challenges of our time. Generation Scrap aims to do just that – instill a combination of global insight, cultural context, current and future sustainability initiatives, and design practice into a cohesive project that redefines the scope of materials for the built environment.

#### REFERENCES

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## The Anthropocene Living in a World of Waste

Over 5 trillion pieces of plastic litter the ocean, primarily from containers, bottles, fishing nets, & shopping bags. 16 million tons of textile waste is generated in the US, yet only 2.62 million tons were recycled.





# The Project Components Collaboration Between Education & Industry


### **Trend Forecast** The Future as Seen by Gen Z



### Carpet Design Gen Z + Industry

Patching the Pacific ~ A Tile Collection



### **Carpet Design** Gen Z + Industry

### Waves of Denim ~ A Rug Collection



### When in Detroit, You Do Detroit Things, and Yes the Branding is Awesome

Terry Londy, Florida State University

#### ABSTRACT

Introduction "The principles used in successful packaging- clarity, emotion, and a natural reading sequence apply to every type of brand design" (Neumeier, 2006) Packaging design, the company website, the logomark, and the interior design regardless of the entity must seamlessly align to maximize the Brand experience. Excellent workplace design embraces beautiful finishes and furnishings and impeccable space planning. All of these are incredibly powerful, but without Branding there is no soul. Environmental Graphics tell a well-crafted Brand story, intricately woven through the space. This encourages the user to uncover an enhanced connection to their environment which strengthens the organizational culture and builds loyalty between inhabitants. Process Kevin Lynch explored architectural forms and their influence on visual perception at the city scale (Lynch, 1960). His principles are transferable to how interior space is engaged & navigated by a user. Based on Lynch's principles, the design process of building brand experiences in the interior starts with a critical mapping exercise where pathways, nodes, and landmarks are identified to locate key impactful Brand locations. Utilizing this strategy results in a space allowing the Brand to become tangible, experiential, and making a unique lasting connection with the user. Story This presentation will weave together meaningful and humorous reflections of an environmental graphic designer and Brand expert (and is now a university professor) who served as a guest lecturer for two consecutive spring studio sessions in 2020 and 2021. This story begins at the dawn of the Covid-19 pandemic, reaches into the mid-pandemic and will weave in anecdotes that were unthinkable only 18 months ago. The spring of 2020 brought an opportunity to take a break from commercial design projects and act as a guest lecturer/critic in a university workplace design studio. St. Louis was the project location and a selection of STEM toy Brands were provided as clients to the students for their interior office

spaces. The author and faculty kicked off the project via zoom with a lecture demonstrating the importance of the Brand presence in the workplace. In traditional pre-pandemic fashion, the virtual meeting had its challenges of muted mics & sharing the wrong screen. Little did we know how masterful we would become in wielding the virtual meeting in the months ahead. The author was invited to visit for one final in-person critique to see the Brand implementation that required a 5-hour flight in order to spend 2.5 hours with 3 full studios, sketching, giving feedback before it was time to fly home. The things you do for fun... 2021 would be the sequel, and they had Detroit, the epicenter of blue collar cool. Iconic Brands have a rich history to celebrate and fundamental ingredients that people gravitate to, building unshakable loyalty. As an example, Faygo pop is famous for its creaminess and carbonation, as well as approachable whimsical Branding. The interiors needed to be well researched and reflect those unique kind of elements. The student projects were rich with authentic conceptual ideas and innovation, celebratory of Detroit and the birth of these Brands. Not only were the interior spaces well planned, sustainable, and meticulously designed, they now had a soul - an unmistakable energy that resides in every interior bringing the cool factor that was alive in all their designs, not just the packaging, or logo, but the Brand Experience.

#### REFERENCES

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Neumeier, M. (2006). The brand gap. New Riders.



### WHAT IS EGD ?



Slides from Brand/ EGD Guest Lecture

SETTING CHARACTERS PLOT MOOD MOVEMENT



#### TYPOLOGIES PROJECT STUDY & ANALYSIS

PROJECT: WINTER OLYMPICS PLAZA LOCATION: BEUING, CHINA CLIENTS: BEUING SHOUGANG CONSTRUCTION ARCHITECT: CCTN AREA: 936, 460.21 SO. FT. YEAR: 2017



### 2020 student work excerpt **St. Louis Workplace**



### PROJECT OVERVIEW

THE WINTER OLYMPICS PLAZA CONSISTS OF MANY INDIVIDUAL BUILDING STRUCTURES THAT MAKE-UP A UNIFIED WHOLE. THE PROJECT WAS DESIGNED USING STEEL AND CONCRETE CONSTRUCTION TO PRESERVE THE INDUSTRIAL HERITAGE OF THE SURROUNDING ENVIRONMENT. OPEN OUTDOOR SPACES WERE INCORPORATED INTO THE DESIGN TO BRING NATURE TO THE INTERIORS.

#### DESIGN IMPLICATIONS

- OPEN LANDSCAPE AND OUTDOOR PUBLIC SPACES CREATE A CONNECTION TO NATURE ALLOWING INDIVIDUALS TO INTERACT WITH THE ENVIRONMENT AROUND THEM.
- THE CONTRAST OF THE LARGE-SCALE INDUSTRIAL BUILDINGS AND SMALL-SCALE HUMAN BODY CREATE A SENSE OF 'ORGANIC INTEGRITY'
- THE ENTIRETY OF THE PROJECT CREATES A VIVID INDUSTRIAL LANDSCAPE AS IT'S COMPRISED OF INDUSTRIAL HERITAGE AND CHINESE CADDENS.
  - IS STRUCTURES AND OPEN SPACE CREATE A LIVABLE COURTYARD EMPHASIZING A SENSE OF COMMUNITY.

SPACES REFLECT OPEN SPACE AND NATURALISTIC AT RECREATE THE ORIENTAL PHILOSOPHY OF

#### THEORY PROXEMICS THEORY

 EXPLAINS HUMAN PERCEPTIONS AND REACTIONS TO THE SPACES AROUND THEM, PROXEMICS IS THE STUDY OF NONVERBAL COMMUNICATION ASSOCIATED WITH TOUCH, BODY MOVEMENT, PARALANGUAGE, AND STRUCTURE OF TIME. THIS CAN BE FURTHER CATEGORIZED INTO THE FOUR SPACE ZONES: INTIMATE, PERSONAL, SOCIAL, AND PUBLIC.

#### AVALYSIS THROUGH THEORY

THE WINTER OLYMPICS PLAZA CREATES A VARIETY OF SPACES THAT REACT TO SEVERAL OF THE PROXEMICS ZONES. THIS CREATES FREEDOM OF CHOICE BY ALLOWING INDIVIDUALS TO CHOOSE WHAT KIND OF INTERACTIONS THEY WANT TO ENGAGE IN.







# RECEPTION DETAILS





2020 student work excerpt **St. Louis Workplace** 



RECEPTION ELEVATION SCALE 1/8" = 1' - 0"

#### SECTION PERSPECTIVE

#### LVL 2

#### WORK CAFE COLLABORATION LOUNGE SHORT TERM ENCLAVES 10 PERSON CONFERENCE ROOM

AGILE WORKSTATIONS EDUCATION AND TRAINING ROOM MANAGEMENT & ADMIN 2-4 PERSON CONFERENCE ROOMS ADVERTISEMENT & MARKETING SALES EXECUTIVE OFFICES LONG TERM ENCLAVES

#### **MEZZANINE**

SOFT LOUNGE

LVL 1

RECEPTION

### 2021 student work excerpt **Detroit Workplace**

PRODUCT DEVELOPMENT LEGAL & REGULATORY ACCOUNTING SHORT TERM ENCLAVES 6 PERSON CONFERENCE ROOM



#### 22



#### LOWER LEVEL WORKSTATIONS

23

The workstations are the heart of the lower level and reflect the hard-working tendencies of the McClure family. The workstations are clustered together as a group, but with different department focuses, accounting, legal and regulatory, and product development. With these departments working near each other, collaboration is bound to happen. Acoustical lighting fixtures hang above each station to aid with high noise levels that could happen. In case the acoustical lighting is not enough, task lighting is also provided for user choice. Storage units are also provided beneath the desks to accommodate for loose items and file organization. The vast brick wall creates a warm and welcoming atmosphere in contrast with the white wall and concrete flooring. The McClure's logo is immediately noticeable once users move past the reception area which is highlighted with light moss greenery that reinforces the McClure's efforts for fresh ingredients.



#### 20 | 20

### Have You Seen How Your Fellow Educators are Teaching Lighting?

Erin Speck, George Washington University

#### ABSTRACT

Without light interiors are invisible! The goal of the lighting educator is to inform the design student of various characteristics of light, both electric and natural, and the spectrum of lighting technologies that can really bring a room to life. Additionally, advances in the understanding of how lighting affects health and well-being require that the design student takes these effects into account throughout the design process. How are design educators acquiring this new information? What resources are available to lighting educators that allow them to pursue new information and incorporate it into their teaching? How do educators share this information? With the current shift in teaching to a learning paradigm, lighting education has moved beyond the classroom walls to look more like a workshop experience instead of the traditional classroom setting. Students experience lighting effects using Oculus VR headsets1, building cardboard models to test daylight integration, and are equipped with light meters, colour meters, and other to collect data for later lighting analysis. There are organizations that fund the gathering and dissemination of new lighting information for educators' use. This is important, because advancements in lighting for health and well-being, daylighting, controls, and the lamps themselves have a bearing on how interiors are experienced and enjoyed. Traditionally students create reflected ceiling plans near the end of their design process, missing the opportunity to seamlessly integrate the lighting throughout their designs. An educator that is current with one or some of these new lighting models provides the student with an advantage and possibly causes that student to delve further into the subject as their design evolves.

#### REFERENCES

1. <u>https://www.architecturaldigest.com/story/virtual-reality-augmented-reality-apps-oculus-vr-design-world</u>











#### 20 | 20

#### **Deconstructing Systems Education**

#### Alan Antioquia, Mount Royal University

#### ABSTRACT

Interior design building system education is traditionally taught with independent classes of construction, lighting, building code, and materials. Each class focuses on one subject matter where students learn the language, theories and the application to interior environments. When interior design pedagogy is based on a thematic approach for each semester, a traditional approach to building systems education must be realigned. How does a thematic approach to Interior Design education fit a traditional pedagogy of building systems? It does not! Therefore a new pedagogical approach to systems education must be employed. This new approach dismantles each building system category and reassembles it to be thematically relevant for each semester. Deconstructing and reassembling each of the standard systems classes allows for a new and holistic approach to systems thinking. The content for each subject follows a framework of student learning objectives of introduction, awareness, understanding, and application. In order to reassemble subject matter content, seven categories were created exploring each semester themes: code regulations and guidelines, construction, materials, lighting, acoustics, thermal comfort and wellbeing, and mechanical and electrical systems. These categories create the guide for lectures, exercise modules, and assignments so that as students move through each semester, information increases in complexity and is laddered to support current knowledge. This system's realignment is designed to encourage creativity and inquisitiveness of the built environment. As an example in semester three, the theme of connectivity is investigated in various scales and complexity. Students explore how interior spaces connect both horizontally and vertically using interior devices such as windows, doors, corridors, floor transitions, stairs, escalators and elevators. They also explore various scalar connections in interior environments, from complex wood frame construction to casework detailing. Scaled models are used to explore complex frame construction and then utilized to create two-dimensional drawings. Lecture exercise

modules allow students to practice content such as drawing sections of their model to understand the impact of doors or windows. Students perform site investigations on key stairs around the university noting its design, material details, construction and connection between floors. The stairs are then plotted to scale on a wall where the configuration, rise and run, and code requirements are discussed. Interior materials are explored using material sample kits allowing students to physically investigate samples and apply the knowledge from assigned readings. Lighting is explored with exercises in lamp identification and specification leading to applying the knowledge to light mapping interior environments as a device to choreograph the movement of people between spaces. The comprehensive approach to the understanding of building systems challenges how subjects are introduced in each semester. Students learn conceptual ideas and theories in Systems lectures supported with exercises assignments, and then applied in studio projects. This pedagogical model highlights the commitment that systems education should be holistically integrated in the design process and can be taught in a thematic based curriculum.













### They Told Us To Stay Apart, So We Decided to Get Close

Andrea Sosa Fontaine, Kent State University

#### ABSTRACT

"A good way to rid one's self of a sense of discomfort is to do something. That uneasy dissatisfied feeling is actual force vibrating out of order; it may be turned to practical account by giving proper expression to its creative character." -William Morris (1909, p. 1454) Since March 2020 we have all been forced to keep our distance, both physical and social. Some have been isolated within the rooms of their domestic interiors while others have been propelled to spend time outside as an effort to maintain distance. As we return to life without distance, we also return to being close. In the summer of 2021, we were preparing for a return to normal on campus, vaccines were readily available with increasing uptake numbers in our area. With many restrictions lifted, and perhaps a newfound sense of freedom, we were adjusting back to what we thought would be a return to a typical academic semester. In preparing for the fall semester, faculty discussions focused on reflections of the past year, noting that some of our students had never set foot in studio, and others had forgotten what it was like to learn in an environment with a rich studio culture, full of dialog, design and reflection. We spoke about longing for a return to a studio environment where we could share the same pencil as our students to sketch through an idea, and peer at a sketch model from multiple angles to help move the work forward. Diving right in, with hope for a return to past studio practices, our semester began with a fall student design charrette that was meant to bring us back together, to reignite studio culture by reminding students what it meant to be think about and design interior space. As a vertical team project, interior design students were welcomed back to campus, fully immersed in design practices within the first hour of their studios. The charrette was simple in approach, students were asked to design an object of interior space (furniture, partition, or installation) that responded to the provocation; "How does interior space prompt us to get close?" They were then asked to build a

full-scale prototype of their response to the prompt. The only constraint applied to the charrette was that the material for the prototype had to be a paper product. Students took over the entire college, all four floors, every nook and cranny. They were only given one week to work on the charrette. Each team had the opportunity to meet with at least two studio instructors per day to help them work through their design intent, and details of fabrication. It was hectic, stressful, and unorganized at times. Students had to relearn how to work in teams, and create space for open dialog, which for some was a challenge, but students showed up, did the work, and presented thoughtful design solutions that captured this moment in time. A return to studio culture, through a reflection on the fragility and uncertainty that comes with proximity.

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Fig 1: An empty campus.



Fig 3: Get Vaxxed.



Fig 2: New teaching modalities fostered new ways to design.



Fig 4: Masks (Again).



Fig 5: William Morris told us to do it. (Deb Golub, 2021)



Fig 6: A return to studio culture.



Fig 7: Thinking about what paper can do.



Fig 8: Thinking about how kids need to be close.









Fig 9: Studies about privacy.

Fig 10: Personal space in public.



Fig 11: Close conversations to save the oceans.



Fig 12: Learning that design helps us work through conflict.



Fig 13: Thinking about travel.



Fig 14: Easing the stress of travel.



Fig 15: It's a generational thing.



Fig 16: Impacting interior space.



Fig 17: And the winners are....



Fig 18: A thoughtful response about forgotten children.



Fig 19: Party Subs.



Fig 20: We're Back, but not so normal.



### Living Little Lahijan: A Model for Sustainability in the Hotel Indutry

Farzane Omidi, Texas Tech University Debajyoti Pati, Texas Tech University

#### ABSTRACT

Living Little Lahijan: A Model for Sustainability in the Hotel Industry Sustainability is a critical goal in the design sector. One way to achieve this is to consider the economic, ecological, and social systems associated with the design. For an interior designer, this requires thinking of the interior space as a whole in addition to its structural and architectural parts (Celadyn, 2018). This approach could produce designs that positively contribute to the economic outcomes of local communities, reduce the design's environmental footprint, and improve the well-being of the users. In particular hotels can present a unique set of design challenges based on their resource consumption and size. To achieve sustainability, the designer must consider the needs of the traveler and those of the host region (Yousrallah Mohamed, 2020). This presentation outlines a new approach to sustainably designing the interiors of hotels that align with the three principles of sustainability listed above. Specifically, the design utilizes elements unique to Lahijan and other innovations to create an experience that supports the local community and provides an enjoyable experience for tourists. There are three strategies implemented to address sustainability in the interior design of the hotel. The first is a rainwater harvesting system that relies on the steady precipitation in the region to offset the hotel's high water consumption. The second design strategy takes advantages of the biomimicry of termite mounds to increase the airflow within the hotel and reduce reliance on air conditioning to keep the building cool. The third design strategy that is unique to this project is incorporating local production as part of the hotel's overall aesthetic tied to tea production, a key cultural and economic driver in the local community. This strategy will take the form of a small farming and manufacturing facility on-site that produces tea served in a café in the hotel and sold to tourists in shops. Each of these strategies aims to

establish a design that is environmentally, economically, and socially sustainable. As a result, hotel guests can enjoy a unique experience staying at the hotel, those in the local community are economically supported, and hotel owners can contribute to sustainability while also reducing cost and increasing revenue. This design is unique in that it combines innovations aimed at sustainability with environmental and economic features specific to the region. This design is not intended to provide a blueprint for the construction of identical hotels in other cities. Instead, it offers a strategy that other designers can follow to find specific solutions that are tailored to the climate and culture of the city in which a hotel is being built. Coupling sustainability with cost-saving measures and opportunities for additional revenue increases the likelihood that design strategies such as the one outlined in this presentation are adopted by the hotel industry. This design can serve as the foundation for other designs that seek equally unique ways to engage with the local community while being economically viable and environmentally responsible. As a prototype, the final product is intended to provide visitors with a small sample of Lahijan, a living thing that breaths, drinks water, adapts to the season, and has income!

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Yousrallah Mohamed, D. (2020). Achieving Sustainable Tourism Development of Hotels' Interior Design Using (Ecolodge (as one of the Environmental Design Solutions.

# A Model for Sustainability in the Hotel Industry

# **3L Hotel (Living Little Lahijan)**

### INTRODUCTION

There is an undeniable interaction between the physical environment, the economy, and society. The main pillar of moving toward sustainability is considering these three parts at the same time. This project tries to redesign a hotel in Lahijan city by considering comprehensive sustainable design in these three different contexts. The changes that occur in this project alter both exterior and interior of the building. The new design has turned a simple hotel, which struggles economically in low season to a lively center in which sustainability has been integrated with interior design, landscape design and building itself.



### **EXISTING HOTEL DESIGN**





## LOCATION

The site is in Lahijan city which is in north of Iran. This region is close to the Caspian Sea and has a moderate climate. The most negative aspect of the region is a high humidity rate.







Site location in the Lahijan



View1 - Adjacent Lahijan Lake

## **MEANING of 3L HOTEL**

### It comes from **living little Lahijan**.

Lahijan: Historically, Lahijan featured is known to famous surrounding tea farms, ancient pottery and silk products. These activities had an important role in the economy of this region, but they do not have any role in Lahijan's economy these days and a traveler cannot visit these historical activities in the city. The economic diagram shows the current sources and refers some solutions in this project to enhance that.

Little Lahijan: The hotel is in a great location due to close proximity to two main attractions, Lahijan lake and Sheitan mountain. Because of this great advantage, along with the different Lajihani features, this hotel is a little Lahijan.

### Living little Lahijan

Living means livelihood. It also means sustaining life. Both definitions are the two main concepts of this hotel. In the past, people were not dependent on nonrenewable energies as much as now, and instead they were using natural architecture strategies in their buildings. Also, they had a strong bond with green areas. In order for the hotel to live these two concepts, this hotel follows the sustainability factors.





View2- Adjacent Sheitan Mountain's tele cabin and Lahijan city View



| SOLUTION                             |    | AREA    |  | R |
|--------------------------------------|----|---------|--|---|
| Rain Bowl Concept                    | Ň  | (S iiji |  |   |
| Underground Cistern                  | N. | \$      |  |   |
| Solar Tiles                          | N. | 6       |  |   |
| Stuck and Cross<br>Ventilation       | N. | \$      |  |   |
| Foldable Doors                       |    | ß       |  |   |
| Termite Mound<br>Inspiration         |    | 6       |  |   |
| Bio-Inspired Ventilating<br>Envelope | Ň  | \$      |  |   |
| Plants on Balconies                  | N. | 6       |  |   |
| Rain Shading                         | Ň  | 6       |  |   |

Termite Mound Concept

Foldable Door

APR- MAY- JUN Wind





- Solar Tiles Absorb Sun Rays
- The gap between two cellings is in SEP and APR-MAY-JUN

### **TERMITE MOUND CONCEPT IN LOBBY**

Inspiration from termite mounds helps to design the lobby and cool down this area by natural ventilation. There is down-to-up airflow in termite mounds and the holes in top of that release the hot air from inside. Incorporating 8 stuck ventilation elements on top of the lobby helps achieve this



Openings on the flat roof work like tiny holes in ermite mounds

### **BIO-INSPIRED VENTILATING ENVELOPE**

Bio-inspired Ventilating Envelope is a skin that reacts to changing conditions and influences the air pressure on the surface to perform a process of inhaling and exhaling. It provides an extended surface area for air exchange created by a lot of small active units. Increasing the exchange surface of the skin improves the ventilation through it. This material is used in some parts of lobby walls.







### **RAIN BOWL CONCEPT**

Water shortage is a remarkable problem all around the world. Lahijan has humid climate and rainwater amount is high in this city but, there is no attempt for reusing this water. As designers we can help to enhance the society's knowledge about water usage by our designs. We can already collect the rainwater from existing roof, but it cannot attract people's attention. The Rain Bowl concept wants to help this aim.

The idea comes from this photo and the umbrella. Umbrellas prevent rain and if we change our point of view, we can use the umbrella in different direction to collect rainwater. Consider a structure like an umbrella that is hidden and in rainy days comes up to show the importance of rainwater harvesting! It can be an attraction in the city and in rainy days everyone expects this exhibitive performance on the 3L Hotel roof! It can be a real Performance!





- Largest Rain Bowl is in the lobby
- The Rain Bowl is close in sunny days
- There is a decorative pond under the Rain Bowl which is connected to the underground cistern

**LOBBY - MAIN RAIN BOWL** 



The building1 has two-layer ceiling and the above layer is covered with solar tiles. The bowls can install between the ceilings and come out in rainy days.



Rain Bowls come up in rainy days

- The main Rain Bowl is in top of the lobby and works like a big decorative shower
- Water moves down to underground



# A Model for Sustainability in the Hote Industry

# **3L Hotel (Living Little Lahijan)**



### **INFORMATION - WAITING AREA**

## **STUCK VENTILATION**

Clean, fresh air and moderate climate offer a chance to use natural ventilation in the hotel rooms for half of the year. Since most of the rooms just only have access to the outside on one side, it is not possible to use cross ventilation. However, stack ventilation is a great idea for the rooms on the third floor.

There are two-layer ceilings on this floor, and considering the elements for stack ventilation between these layers is a sustainable decision. The top roof provides shade from the elements and prevents greenhouse effect. Simultaneously, the gap between two layers is aligned with the natural wind direction and allows the airflow to come through.







### **TEA FARM CAFE**

Tea products are the main feature of this region and is the main driver for the café design. Also, there is a shop in the hotel to sold tea products in order to support local community. In the Café slanted windows provide a plentiful amount of natural light for flower boxes inside the café, all of which are full of tea leaves. While the customers can look at tea farms from the windows, they can touch and smell the real tea leaves that surround them. Using related and natural patterns of tea farms in the café provides a unique experience for customers, like sitting in a tea farm and drinking a cup of tea.

## MATERIALS

- toxins also locally harvested wood in the adjacent forests
- There is some local natural sources of Granit close to project which can minimize the distance for transportation.
- Being surrounded by a natural material like wood, it significantly increases overall wellbeing.
- aesthetic of the hotel.



• Materials of this hotel are rapidly renewable materials, free of

Natural and renewable materials such as bamboo enhances the



Bamboo Wall **Covering Roll** 









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### Considering the Role of Artifacts in the Design of a Residence

#### Elise King, Baylor University

#### ABSTRACT

The purpose of this presentation is to explore the role of "artifacts," a concept more commonly discussed in the context of urban planning, in residential design. Architect and theorist Aldo Rossi defined an artifact as "a form that persists through a set of transformations" (Rossi 55). Artifacts are anachronisms—elements from the past that remain in the context of the present. They are expressions of vernacular character often in contrast to urban uniformity, for example smokestacks from a former factory now lining the entrance to an outdoor shopping area. In this presentation I will discuss the role of artifacts in the design of a residence, in which they were used to create a dialogue with a neighborhood's complex past. Background: The site is located in a small neighborhood that was first developed in the late nineteenth century. Several significant floods in the early 1900s, a devastating F5 tornado in 1953, and years of economic neglect have left the neighborhood dotted with numerous vacant lots. At the time of this project's construction, of the 10 parcels on the block, half were vacant. Approach: When approaching the design the aim was to incorporate the character of the neighborhood and the previous occupants of the site. But beyond designing a facade that complemented the existing character of the neighborhood, what else could be done? Information about previous structures was limited: there were no photos or drawings in local archives, and while old newspapers offered fascinating details about the former occupants (including a murder and a fire), they didn't offer any clues about previous structures on the site. I determined that the approach, therefore, needed to be driven largely by entering into a dialogue with the site. The process was guided by the following basic tenants: 1) whenever possible, existing artifacts should remain in place; however, 2) if an artifact can't remain, then its memory should be recorded and/or the artifact should be reused elsewhere in the project. Examples of both are included below: The siting and placement of house, for example, was planned around the larger artifacts which were not disturbed. Today,

both entrances to the house are marked by history. The front steps leading from the sidewalk were retained and are connected to the front door by a series of contemporary concrete steps. The old driveway with its tall, boxy curb was saved as well, adding a short new section to connect to the detached garage. Not everything, however, could be retained. For example, disease and highvoltage power lines necessitated that two trees had to be removed. To preserve their memory a print of the stumps was created to later hang in the interior. In contrast to the facade, the design of the interior is more unrestricted. A clear dialogue remains, however. Pine tar coated wood siding, which infills the covered porch areas on the exterior, continues on the interior as a spine through the ground floor. The wood siding is a reference to painted clapboard siding that is featured prominently in the neighborhood. After surveying the site, a character/pattern analysis was conducted. In addition to the wood siding, the study informed the massing of the house, roof shape, and other materials-reinforcing a connection between neighborhood, exterior, and interior. Conclusion: Artifacts are complex and raise questions of authenticity, representation, and memory. They can be used to facilitate connections between diverse groups of people and connect new and old. They can evoke a collective memory as well as spark individual ones. In this project, artifacts served multiple functions, including establishing restrictions/boundaries, serving as connection to the past, and providing sources of inspiration for design decisions. As designers continue to seek sensitive and respectful ways to incorporate the past and present, a consideration of artifacts offers one such approach.

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Figure 1. Pattern analysis of neighboring residences



Front steps were preserved (seen here before construction). The steps, along with the driveway, provide a connection to the past at both entry points.

Original concrete steps integrated with new steps/pavers.

Old driveway connecting to new sidewalk and garage.

Figure 2. Integration of original exterior entrances





When two trees had to be removed due to their proximity to high-voltage lines, prints were created to preserve their memory. The process included the creation of an initial ink print on site, which was later overlaid over inverted photos in Photoshop to bring out additional details.

Figure 3. Reuse of natural elements on the interior


The neighborhood analysis revealed painted wood clapboard siding as a common characteristic of neighboring homes. For this residence, wood planks were charred and then finished with pine tar to create a more durable finish. They were applied under covered patio areas and along a spine on the ground floor, spanning the length of the house and reinforcing the connection between the interior, exterior, and neighborhood.

Figure 4. Connecting the interior with historic neighborhood character

## Neighborhood Clubhouse- A New Concept in Apartment Community Living

Kelly Jahn, Kelly Jahn Interior Architecture and Design & RIT

## ABSTRACT

In 1989 Ray Oldenburg published a book called The Great Good Place, in which he discusses the importance of third spaces. Oldenburg's use of the term third space was in reference to coffee shops, bookstores, airports, or any other space people find to work outside of a traditional office setting. Over the past two decades the idea of third spaces became intentionally designed into our workplaces, our universities, and our homes. As we move into a post pandemic world where offices become hybrid work environments, schools maintain the option for remote learning, and people are seeking social interaction, will third spaces move back into the community? The Neighborhood Clubhouse, serving a large, newly constructed apartment community, was designed during the height of the pandemic. The clubhouse is a collection of third spaces designed to encourage neighborly gathering, promote pride of place, build community, and provide a safe space to work, learn, and socialize outside of your apartment. Sometimes the neighborhood pub, other times a coffee house, event space, co-working space, tutoring center, or fitness center, the clubhouse will serve as the anchor of the community. The unique spaces within the clubhouse are right sized for small gatherings or designed to flow together for larger events. The Scandinavian influenced, biophilic design approach is carried through all aspects of design from building form and fenestration pattern to interior layout and design, material application, furniture selection, and art and accessory specification. The use of a nature inspired color and material palette, the abundance of natural light, physical and visual connection to the outside, and use of plants and green walls throughout, creates a warm, comfortable space, which appeals to a multi-generational community. Designed: 2020 Construction Start: Winter / Spring 2021 Anticipated Construction Completion: November 2021 Opening: December 2021.

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## The Neighborhood Clubhouse A New Concept in Apartment Community Living





# Design Concept

The Neighborhood Clubhouse, serving a large, newly constructed apartment community, was designed during the height of the pandemic. The clubhouse is a collection of third spaces designed to encourage neighborly gathering, promote pride of place, build community, and provide a safe space to work, learn, and socialize outside of your apartment. Sometimes the neighborhood pub, other times a coffee house, event space, co-working space, tutoring center, or fitness center, the clubhouse will serve as the anchor of the community. The unique spaces within the clubhouse are right sized for small gatherings or designed to flow together for larger events. The Scandinavian influenced, biophilic design approach is carried through all aspects of design from building form and fenestration pattern to interior layout and design, material application, furniture selection, and art and accessory specification. The use of a nature inspired color and material palette, the abundance of natural light, physical and visual connection to the outside, and use of plants and green walls throughout, creates a warm, comfortable space, which appeals to a multi-generational community.



# **Design Goals**







Engage all the senses to foster culture and celebrate people and place



Protect people and the environment by creating just and resilient spaces that can adapt, respond, and innovate.



## Exhibition Design: Practical Applications of Interiors for Delievering Artists/ Messages While Meeting COVID Protocols

Kyoungmee "Kate" Byun, Northern Arizona University Lesly Harris, University of Louisville

## ABSTRACT

Background Notably, museum exhibitions have to not only allow for contemplation of the archives or objects but also communicate to audiences the meaning of the exhibitions' educational purpose. Therefore, many scholars have researched museum exhibition design; how spatial layout helps to communicate to audiences effectively. However, there is a lack of study about the effectiveness of the interrelation between physical settings and exhibits to deliver artists' messages. Since audiences can freely move around in an exhibited environment, they can be affected by the physical settings to become emotionally, intellectually, and physically implicated in the messages. Therefore, exhibition design needs to consider physical factors. Based on four spatial narrative theories, three distinct factors of narrative environments; form, scale, and light were examined for the practical application to an exhibition design. Narrative environments were intentionally designed in a gallery at an urban mid-western university based on the narratives by qualitative photovoice analysis from a project titled "Understanding HIV Risk and Resilience among Adolescents who have been orphaned by HIV/AIDS in Hai Phong, Vietnam". The gallery was designed to examine different physical settings (e.g., from, scale, and light). A defined group of 30 participants (total 6 groups) experienced the exhibition respectively to explore their perception of the effectiveness of interactions between physical settings and narratives. All participants filled out Likert scale survey questions and semi-structured interviews were conducted for data collection. As a result, this study showed that audiences received the artists' message more effectively under the condition of cool artificial light in a closed and small gallery space. Design Statement The project was invited to exhibit with three artists as an

international group show titled "The Past- Present: The Past Called by Present" in Space XX, Seoul, Korea in June 2021. The purpose of this exhibition design is 1) to deliver artists' messages as one concept, 2) to examine how the three physical settings of exhibit interiors have an effect on the delivery of artists' messages, and 3) to ensure that the exhibition met and took into consideration COVID-19 health and safety protocols. The Past-Present: The Past Called by Present shows that challenge the linear concept of time. This exhibition explores how we revisit the recent past to reconsider the ramifications of such events as war, diseases, and those involve illegitimate political power. Incorporating the memories, traces, and documentations, the artists in the show recreate the past and provide renewed experiences and memories. In order to deliver artists' messages, the linear lines are used to be connected with all exhibits, to create a frame in the frame for creating the optical illusion, to provide social and physical distancing of 6 ft regarding COVID 19 health and safety protocols. linear lines of cool artificial lights are installed to generate uniform ambiance in the exhibition space as well as to assist in delivering narratives effectively. In addition, the red color of linear lines represents warning and intensity about the ramifications. Throughout the exhibited space, vinyl coverings are used to divide the space, not to spread the virus, and to remind that how we cope temporarily with the pandemic at the beginning of COVID 19. Because the given condition of Space XX is a small and closed exhibition space, cool artificial lights are placed to examine the three factors of the physical settings of exhibit interiors. To satisfy artists' intentions, computer-rendered 3D visualization of exhibition space using Building Information Modeling (BIM) is provided to communicate and review. After several discussions with artists, they agreed with the proposal about the design concept and it is constructed in June 2021.

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## Appendix

1. Proposed Space Planning with Five exhibits



2. Proposed Space Planning Considering Social and Physical Distancing of COVID 19



Space XX 전시 디자인: 사회적, 물리적 거리두기. COVID-19 제한된 인원만 점해진 시간에 만할 가능. 각 전시의 멈춤 포인트 및 앉음은 2m 이상씩 떨어져 지정됨.

3. Computer Rendered 3D Visualization by BIM \_ No.1: "don't wear a mask unless you're sick"



4. Computer Rendered 3D Visualization by BIM \_ No.2: "Room 204"



## 5. Construction Photo



6. Completion \_ a Frame in the Frame #1



7. Completion \_ a Frame in the Frame #2



8. Completion \_ Vinyl Coverings



#### 9. Poster Design of the Exhibition



#### 과거현재형: 현재가 부른 과거

기획: 장보영 전시디자인:변경미

참여자: 김영은 변경비 X 레즐리 해리스 이재욱 최원준

스베이스 XX 서울 영등포구 문래동 도립로 128 지하1층 2021년 6월 26일 - 7월 18일 (매주 월요일 휴관) 12시-18시

Curator: Chang, Boyoung Participants: Lee, Jaewook Byun, Kyoungmee X Harris, Lesley Che, Onejoon Kim, Youngeun

SPACE XX Dorim-ro 128ga-gil (b1), Mullae-dong, Yeongdeungpo-gu, Seoul, South Korea June 26, 2021 – July 18, 2021 12pm-6pm (Closed on Mondays)

Scholarship of Teaching and Learning | Pedagogy | Poster

## Sketch Inhibition in Interior Design Students: Impact of 3 Studio Interventions on Confidence and Design Development

Elke Altenburger, Illinois State University Isabella Falche, Illinois State University Haley Gwin, Illinois State University

## ABSTRACT

Topic: This is a study of instructional strategies, intended to help interior design students overcome sketch inhibition while exploring the social affordances of a studio space. Design educators have been observing sketch inhibition in students since digital tools started to be incorporated widely into industry and higher education. Affected students are reluctant to engage in sketching activities, insist that they cannot work in the studio, and request to leave sessions in which sketching is required. They believe that they are unable to "think on paper." Teachers commonly assume a connection between sketch inhibition and the low quality and lack of depth of design solutions, which are exacerbated by the avoidance behavior they observe. Industry leaders have expressed difficulties to find designers with sufficient manual ideation skills. Design education continues to struggle to address the problem effectively (Thurlow et al., 2019). Context: As most current design students belong to the digital generation, the predominant reliance on digital tools throughout the design process could simply be a consequential development, perceived as a problem only by older designers who are less fluent with drawing software. However, researchers of design process and the diverse functions of sketches disagree. Sketches are instruments for visual thinking and communication. Sketching supports design thinking, helps to externalize, see, and store thoughts instead of having to memorize them. Sketching allows for quick switches between drawing and reflection to support problem solving (Bilda et al., 2006). Sketching has been conceptualized as a thinking process itself, a way to methodically explore, test, and develop ideas (Leblanc, 2016). Sketching enables designers

quickly to investigate multiple paths, while drawing software tends to encourage attention to developmental details. Overreliance on digital tools or hard-lined hand drawings during ideation phases possibly encourages fixation with a premature solution, developed in an overly linear process (Cross, 2001). Sketches create a record of the creative process while digital tools emphasize the current state of the design development, which could render the design process invisible and by extension irrelevant to the novice designer (Goldschmidt, 2003). Methods: We developed three interventions to the interior design studio practices that the primary investigator teaches regularly: (1) we explain the function and benefits of sketching more explicitly than in previous semesters, (2) we incentivize the production of larger amounts of sketches, and (3) we engage students in playful sketch exercises on large whiteboard surfaces. After determining a baseline for how (un)comfortable students initially were with sketching, two undergraduate research assistants, both familiar with previous classroom proceedings, observe all relevant studio sessions. They write ethnographic fieldnotes, take photos, and maintain a research journal to reflect on their positionality and first impressions of the effectiveness of the new strategies. The team meets biweekly to coordinate data collection proceedings. We recruited five sketchinhibited participants for semi-structured interviews designed to encourage them to share their perceptions. The research assistants will conduct and record interviews. The analysis of the transcripts will be a collective process supported by qualitative data analysis software. It will consist of open and focused coding, followed by theme development for each student, and later cross case analysis. Conclusions: There are two surprising and encouraging preliminary observations we can share at this point: (1) Sketch-inhibited participants appear to enjoy the somewhat public process of diagraming on the whiteboards. (2) During the whiteboard exercises we experience the design students as collaboratively engaged with the design project at hand on previously unprecedented levels.

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Scholarship of Teaching and Learning | Pedagogy | Poster

## The CritiBurger: A Method of Peer-to-Peer Assesment in a Design Drawing Course

## Betty Torrell, Bellevue College

## ABSTRACT

The Critburger was originally developed to provide targeted prompts during informal pinup sessions where students presented their work in class for a Design Drawing fundamentals course in a general response to one of the course student outcomes, "Develop students' ability to constructively and objectively critique design drawings as an iterative method of continuous quality improvement." The specific goals of the exercise were: to develop students' skills in reading, understanding, and analyzing a design drawing, as an opportunity to understand and apply design drawing concepts and terminology, and to see and analyze other student's design drawing work by which to judge their own progress. The discussion for in-class pinups utilized a "hamburger" format originally developed to provide structure for writing assignments as described in (Dunn, 2020). The Critburger format consisted of two constructive comments representing the hamburger buns and one constructive comment for improving the work represented by the patty. The special sauce consisted of recognizing one thing that may not have been specifically required in the assignment but enhanced or improved the work in some way. Students in class participated in the in-class pinup sessions with the targeted prompts of the Critburger using notecards to develop and record their comments on one classmates' work from the pinup and turned the notecards in for grading. Students commented that the targeted prompts from the Critburger focusing on one classmate's work gave the structure and to participate constructively in a spontaneous way. The present form of the Critburger as an online breakout session was developed as a response to the need to create virtual peer-to-peer student engagement in the studio-based courses when classes moved online in response to COVID protocols in the spring of 2020. Small groups of students present their current design drawing exercises to each other in groups online in breakout sessions and use the CritBurger's targeted prompts to discuss and assess each other's work. Each student then selects one student's work

and use the Critburger template to document and submit their comments online for grading. Although the online form of the Critburger was developed with the same goals of the original inclass Critburger, the students' comments indicate that these goals may not be the most important outcome of the exercise in a virtual classroom. Instead, the students value the exercise increasingly as a way to connect and engage with their fellow students when in an online classroom setting, especially in a fundamentals class where students have not yet formed a cohort.

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### The CritBurger: A Method of Peer-to-Peer Assessment in a Design Drawing Course

#### Appendix

**Class Exercise Presentation PowerPoint: What is a Critburger?** 



#### Student Comments in Class Reflections on CritBurger Breakout Sessions

#### Student Comment #1

Which class activity did you enjoy the most and why?

I enjoyed sharing my work with the class and seeing other students work. It was inspiring to see other classmates' progress and attention to detail in the assignments. I gained a lot from the breakout sessions and enjoyed getting to know the other interior design students. It's great to have collaboration without it being a group project (difficult to navigate a group assignment over ZOOM, etc.)

#### Student Comment #2

Which class activity supported your understanding of Design Drawings (Journal Exercises, Studio Exercises, Videos, Guest Spearkers, Desk Crits, Critburgers, or Reading Assignments)?

Desk Crits/Critburgers – Imporved my work by hearing critiques from the teacher and other classmates. The best form of critiques would be the Critburger because it was a small group of us working together on our projects through giving and and receiving feedback.

#### **Critburger Exercise Description**

#### Drawing is the discipline by which I constantly discover the world. Frederick Franck

#### Critburger 1-Who Am I?

#### Student Outcomes

This is an exercise with three outcomes:

• Understand the range of design drawings used by interior designers and realize individual potential through design drawing practice.

 Produce freehand drawings using line, structure, tonal value, texture, and composition to convey abstract concepts, spatial depth, design details.

 Convey spatial depth, scale, light, and detail in two- and three-dimensional representations of the built environment.

 Constructively and objectively critique design drawings as an iterative method of continuous quality improvement.

#### Assignment Description



A Critburger is a form of peer-to-peer review where you share your project online with other students in your assigned Group.Groups will be assigned the first week of class and given a Microsoft Teams Channel. If you did not get assigned to a Group let me know and I will add you to a Group. Groups are responsible for getting together to share their work online.

A Critburger gives you several opportunities:

- To develop your skills in reading, understanding and analyzing a design drawing,
- · An opportunity to develop the use of design drawing concepts and terminology verbally,
- To see and analyze other student's work by which to judge your own progress,

Step 1: Share your work with the other students in the Breakout Group by uploading your file of the exercise to the screen with the Action Button.

Step 2: Introduce Studio Exercise 1: "Who Am I?" to the Breakout Group with the following information:

a. Your name

- b. What you think worked well
- c. What was challenging and how you met the challenge

Step 3: Each student will take turns reviewing the other students in the Group with the Critburger; Each student will submit one Critburger Template for review of one other student in the Group Session; two Buns (two things done well and one Protein (one constructive comment for improving the drawing).

a. The Buns: Two ways the drawing was successful in explaining who the persons is.

b. The Protein or Patty: One suggestion to improve the drawing so that it would be easier to understand or read.

Step 4: Submit on CANVAS one Critburger Template filled out for one other student in your Group with your name, the name of the person whose work you are reviewing, the date, and the name and number of the assignment.

Extra Credit-Special Sauce: One creative ingredient that was not specifically required in the assignment but worked well for another student and is something you could incoporate in your future work.

#### **Critburger Student Example Outcomes**

#### Student Outcome #1

Student Name:

Date: 02/09/2021

Peer Reviewed

Peer Project Reviewed: Studio Excercise 3-Finding a Drawing Mentor

1. Top Bun (Positive Comment)



1. Top Bun (Positive Comment) : Leon used a very good layout. I loved the colors used. He made great use of InDesign to create the assignment.

2. Patty (Constructive Comment): There is too much information on the poster. It is difficult to read it because he used a smaller font size used to accommodate all the information

3. Bottom Bun (Positive Comment): The graphics used in the assignment were beautiful. It almost looked like a poster that could be used as a marketing material.

#### Extra Credit

Special Sauce: One ingredient that you learned from the peer review that you could apply to your work : The special sauce was definitely the font. There were no caps used in the font and that gave it almost a gallery appeal. I will definitely use this idea.

#### Student Outcome #2

Critburger Template

Student Name:

Assignment Reviewed: Critburger 5-Journal Exercise 6 (6.3.2021)

Student Project Reviewed:



1. Top Bun (Positive Comment): Samantha did a great job with the contour lines and texture in her rendered drawing. Her line work is very confident and steady.

Patty (Constructive Comment): The weakest sketch was likely the plan view and could be improved with a stronger, more consistent line.

3. Bottom Bun (Positive Comment): The rendered drawing had such interesting added texture with great proportions that really drew you in and made you want to study it more.

#### Extra Credit

Special Sauce: I thought it was an added bonus that Samantha drew entirely from pen from the start and didn't use a pencil at all.

#### Student Outcome #3

Critburger Template

Student Name:

Assignment Reviewed: Studio Ex-1 Who Am I?

Student Project Reviewed

1. Top Bun (Positive Comment)



1. Top Bun (Positive Comment): The organization of the sketch is very logic. It shows a timeline of David's career journey.

2. Patty (Constructive Comment): David's sketch is very interesting, so I was hoping to give me the chance to guess what he is trying to say instead of labeling each picture.

3. Bottom Bun (Positive Comment): I like the characters and icons that David used to represent the games that he develops.

#### Extra Credit

Special Sauce: One creative ingredient that was not specifically required in the assignment but worked well: The ingredient that I have found it creative in David's sketch is that he drew actions and feelings not only objects. For example: resting on the top of computers and working on his wood project by including himself in the sketch.

#### Student Outcome #4



1. Top Bun (Positive Comment) : Karissa's left handed drawing was very interesting in that the lines were so squiggly and impressionistic. We decided it reminds us of the animation from Ed Ed and Eddy from Cartoon Network

2. Patty (Constructive Comment): Karissa could have drawn with a bit more depth, which would have given a little more information to the viewer. Her bedside table was in perspective but nothing else in the drawing was.

3. Bottom Bun (Positive Comment): Karissa also did a good job of keeping within the boundaries of the boxes she made for her four sketches, which created good continuity. And perhaps helped her when she was working on her last drawing (without looking at the page).

#### Extra Credit

Special Sauce: One creative ingredient that was not specifically required in the assignment but worked well: I like that she chose to create boundary boxes on two separate pages for this assignment. I feel like there is an art to drawing in a journal, and considering the space before drawing is a useful skill that will take her far in her sketching journey.

#### Student Outcome #5

Critburger Template

Student Name:

Assignment Reviewed: Studio Exercise 3

Student Project Reviewed: Finding a Drawing Mentor

1. Top Bun (Positive Comment)



3. Bottom Bun (Positive Comment)

1. Top Bun (Positive Comment) : Kenzie did an excellent job at tying all the colors together for the poster. She tied the colors with the picture of her artist, and it looked very professional.

2. Patty (Constructive Comment): I would suggest adding bullet points to the information to make it appear more organized to the eye. That is how bullet points appear to me when I see info, instead of looking like a long running paragraph. Adding bullet points seems so simple and minimal but it helps me when viewing information.

3. Bottom Bun (Positive Comment): The information provided of the artist was good. Having large and bold lettering for the artist and the artworks name make it stand out, along with once again using that color scheme to bring it all together.

#### Extra Credit

Special Sauce: One creative ingredient that was not specifically required in the assignment but worked well: The picture of the artist was a great addition to the poster and it really adds value to the art piece and the time frame of it.

## Digital Prototyping in Interior Design Studio: Using Gravity Sketch in a Lighting Design Project

Hoa Vo, Georgia State University

### ABSTRACT

In creative disciplines, having hands-on technology experiences in design projects enhances students' learning. To be specific, digital prototyping (e.g., 3-D modeling and 3-D printing experiences) induce playfulness, failure-positivity, and collaboration in students (Herren et al., 2020). That is to say, the enjoyment of realizing one's creations unlocks the ability to have fun, take risks, and exchange ideas which, in turn, enhance creativity. With the above benefits, digital prototyping becomes an integral part of engineering, landscape architecture, and interior design studios (Kalantari & Neo, 2020). Nevertheless, the reported learning outcomes (e.g., creativity) were either descriptive statistics or testimonials. The current study, thus, aims to enrich the current literature with quantifiable evidence for the impact of digital prototyping on an important learning outcome in interior design, creativity. The study context is a Lighting Design project in a junior interior design studio (n = 20) at a public University in fall 2021. The project resulted from the partnership between the public University and Gravity Sketch, a virtual 3-dimensional (3-D) modeling application. In seven weeks, students design a custom light fixture through sketching ideas, generating models in Gravity Sketch (using Oculus Quest 2 headsets), and 3-D printing the final prototype (i.e., scale model). The study has received IRB approval and is in the process of collecting data. At the end of the project, students will complete an online questionnaire (administered on Qualtrics) to assess their experience with digital prototyping including self-reported engagement (Handelsman et al., 2005) and individual interest scale (Linnenbrink-Garcia et al., 2010). For self-reported engagement, students will rate one item on a 6-point Likert scale (1 = not at all engaged, 6 = extremely engaged) and five items on a 5-point Likert scale (1 = not at all characteristic of me, 5 = very characteristic of me). For the individual

interest, students will rate eight items on a 7-point Likert scale (1 = strongly disagree, 7 =strongly agree). Descriptive statistics (i.e., means and standard deviations) from the Likert items above will indicate how students perceive the digital prototyping they experience in the Lighting Design project. To evaluate students' creativity, de-identified student works will be collected and rated following the Creative Product Semantic Scale or CPSS (Besemer, 2006). Two independent judges (e.g., alumni, current graduate students in the interior design program at the public University) will rate the sketches, Gravity Sketch models, and 3-D printed prototype on a 7-point scale for three criteria (i) Novelty (newness), (ii) Resolution (appropriateness), and (iii) Style (appearance). Paired t-tests will be conducted for CPSS ratings from the sketches to the Gravity Sketch models and from the Gravity Sketch models to the 3-D printed prototype. The significance level is at 95% ( $p \le 0.05$ ). To assess the impact of digital prototyping on students' creativity (i.e., the learning outcome in the Lighting Design project), Spearman's correlations (rho) will be conducted between: (i) the five Likert items for self-reported engagement and CPSS ratings for the 3-D printed prototype; (ii) the eight Likert items for project interest and CPSS ratings for the 3-D printed prototype. The results, first of all, will inform the instructor of the Lighting Design project about the impact of digital prototyping on students' creativity. Once disseminated in peer-reviewed venues (including conferences and journal articles), the results will also inform other educators about incorporating digital prototyping in particular and technology in general into teaching creativity in interior design studios.

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### Appendix A

### CPSS criteria (with sub-scales) and the rating procedure

- Novelty: Overused Fresh, Predictable Novel, Usual Unusual, Ordinary Unique, Conventional Original
- Resolution: Illogical Logical, Senseless Makes Sense, Irrelevant Relevant, Inappropriate – Appropriate, Inadequate – Adequate
- Style: Bungling Skillful, Botched Well Made, Crude Well Crafted, Sloppy Meticulous, Careless Careful

|                  | Judge 1                         | Judge 2    |
|------------------|---------------------------------|------------|
|                  | Dimensions                      |            |
| 10 sketches      | Novelty                         | Novelty    |
| 3 revisions      | Resolution                      | Resolution |
| 1 final solution | Style                           | Style      |
|                  | Averages of Judge 1 and Judge 2 |            |
| Creativity       | Novelty                         | $M_N$      |
|                  | Resolution                      | $M_R$      |
|                  | Style                           | $M_S$      |

 $M_N$ : average of judge 1 and judge 2 in Novelty,  $M_R$ : average of judge 1 and judge 2 in Resolution,  $M_S$ : average of judge 1 and judge 2 in Style.

## Appendix B

Digital Prototyping \_ Gravity Sketch Screenshots



## Scholarship of Teaching and Learning | Pedagogy | Poster

## Indoor Air Quality Activity in Interior Design Education

## Hebatalla Nazmy, Oklahoma State University

### ABSTRACT

Indoor Air Quality (IAQ) gained attention in the building industry due to its impact on occupants' health, wellbeing, and satisfaction (EPA, 2021). Researchers studied IAQ in various building types using monitoring and post-occupancy evaluation methods (Bae et al., 2017). IAQ is often introduced in interior design curricula and is included in the Council of Interior Design Accreditation professional standards requiring students to understand "the principles of IAQ" (CIDA, 2020). However, no evidence was found of published empirical studies from the interior design sector involving student monitoring of IAQ with various materials and finishes. According to Kolb's Experiential Learning Theory (2014), people learn through the transformation of their experiences. Previous research showed that students were able to progress through Bloom's Taxonomy levels when provided with educational hands-on learning experiences (Castles et al., 2009). The current educator-researcher team proposes that experience-based IAQ education should be utilized and assessed in interior design courses. The current study documents a new, experiential IAQ student exercise which was utilized in an Interior Design Material and Finishes course required for 3rd-year students. The instructor assigned introductory IAQ readings and lectures in Week 1. In Week 3, the research team led 25 students in the IAQ monitoring exercise during a 75-minute class session. Four student teams of 3 or 4 students were assigned to four different material samples (wool carpet and bamboo plywood) or finishes (spray paint) or cleaning products (bleach wipes). Students used an Awair Element IAQ monitor to track temperature, humidity, carbon dioxide (CO2), volatile organic compounds (VOCs), fine particulate matter (PM2. 5), and overall IAQ in the classroom. Students recorded the IAQ monitor readings on a provided spreadsheet. Students took a baseline reading of the classroom IAQ and subsequently monitored materials and finishes for one minute each. Teams recorded time and noted monitor readings. After monitoring, students energized portable

fans, to aid in resetting IAQ values to the baseline between samples. After class, an IRBapproved survey was administered to capture the students' awareness, experiences, and perceptions regarding the IAQ exercise. A total number of 21 responses were collected which represents an 88% response rate. Results showed all (100%) students were aware that ensuring good IAQ is important to interior designers. Almost all (95%) strongly agreed that understanding VOCs was important to interior designers. The vast majority of respondents (95%) thought it was important to learn about IAQ content and most of them (90%) were satisfied with IAQ incorporation into the course. None of the students (0%) indicated IAQ was unimportant and none (0%) were dissatisfied with their IAQ learning experience. More than 70% of respondents indicated that they "can apply IAQ knowledge in practice" and they "can create a new point-ofview" after engaging in the IAQ activity. About 67% of respondents agreed that the IAQ activity helped them "remember the IAQ content" provided in the course. Also, about 50% of respondents indicated that they "can analyze and evaluate the IAQ content" provided in the course. A limitation identified by the research team was that the standard furniture layout in the classroom hindered students' interaction during the activity. Due to CoViD-19 protocols, furniture re-arrangement was not allowed. However, in future activities, it would be best to adjust the room layouts to enhance logistics and students' engagement. In future research, more materials could be monitored for longer time periods. Also, the study of correlations is recommended among students' perceptions of their knowledge of IAQ content as revealed in the surveys; their actual course IAQ quiz results; and their implementation of IAQ knowledge in their design projects.

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### Images of IAQ Activity in Progress



IAQ demostration and sheets handed out to students





Students testing with spray paint and bleach wipes



Students testing with wood and carpet

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Sample of Students' Work

# Scholarship of Teaching and Learning | Pedagogy | Poster

### Light and Form: A Pedogogical Research

### Jun Zuo, Louisiana State University

### ABSTRACT

"The room is the beginning of architecture. It is the place the mind. You in the room with its dimensions, its structure, its light responds to its character, its spiritual aura, recognizing that whatever the human proposes and makes becomes a life." As Louis Kahn suggested, light is a media to be added to a predesigned form to interact with whatever spatial characters of the space. Reverse the process, can light be used directly to guide form/space of creation? This pedagogical study responds to the above research question. Three phases have been planned since year 2019, each of which was incorporated in junior year lighting design class. The theoretical framework of this multi-phased study is derived from Lois Weinthal's perspective, in which the structure of "interiors" starts with human body: the interior space contained by the skin of building provides immediate sensing experiences for people. These experiences are gained by human skin contacting with what Weinthal describes as the "2nd layer of human skin", the space between body skin and the skin of a building. People constantly sense through this "2nd layer of skin" to make connections and understanding of the world. As the dominating component among all senses, the sense of light shapes the '2nd layer of skin' as if a sculptor's knife. Phase I: light used as a medium to work with origami shapes and forms (image 1). Phase II: digital manipulations of light and shadow from paintings; mapping light and shadow on basic geometrics to create lit forms (image 2-4). Phase III: utilization of physics properties of light and shadow as guidelines for light interacting with surfaces to create forms. We have completed Phases I-II, and have started Phase III this Fall. In the phase I, light is added to pre-made shapes and forms. Origami is a method for form building. Here, light and form are two separate elements until an additive process is taken. In this stage, students learned what light sources to choose based on forms. In the phase II, digital manipulations of light and shadow from paintings are used at the beginning to define patterns; then the patterns are mapped onto basic geometrics to build an integrated light and form. In this stage, light is still treated as an added component, however, inspirations are

drawn from paintings for the choices of light sources since the very beginning of design process. The phase II adopts one design thinking, that is to study relationships between light, shadow, and form using 2D paintings as a media. The phase III further reinforces this approach by placing more emphasis on creating 3D forms, in which the "five generic principles of 'space and light" are adopted, which are direction and position of light source, geometry of light distribution, illumination perspective, use of abstraction in luminous compositions and syntactic relationship of surface and source." In the phase III, four steps are to be followed to create sense-provoking designs. 1) students choose a painting and study fully about the painting with a focus on what feelings the painting could provoke by light and shadow; 2) digital manipulations of light and shadow to extract shapes out from the painting; 3) experiment different light sources to interact with the shapes using reflection and refraction properties; 4) repeat step 3) till a form is created. This final installation needs to contain similar or opposite feelings of the original painting that was chosen. With all these three phases, students not only learned to use light for form making, but also learned to create light effect that use painting as inspirations. At the same time, physics of light are actively involved in the design process. This approach gives students opportunities to really think about the deep relationship between light and forms and take advantages of this relationship to potentially create sense-provoking atmosphere in an interior space.

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Image 1: outcomes of phase I



Image 2: Phase II process work 1



#### Hexahedron mapping with dark tone selection



Cube mapping with dark lone selection

#### Concept

Inspired by Chinese ancient window and Cuju [the earliest form of soccer in China]. The pattern chosen areates a "splashed ink" effect on the form, that cames from Zhong Dagian's abstract expressionism with Chinese traditional painting. The cube inside the hexahedron is used as a point light source by insert string lights into straws (the frame of cube). The straws and triangle faces of hexahedron provides a more stable frame to support sheer fabric.

Image 3: Phase II process work 2



Image 4: Phase II outcomes

## Scholarship of Teaching and Learning | Pedagogy | Poster University Campus as Experiential Studio

### Janis Brickey, Middle Tennessee State University

### ABSTRACT

Within the studio experience, experiential events with real-world outcomes are critical to prepare students for the field. The venue presenting multiple opportunities for interior design programs is the campus setting. The University Campus as an Experiential Studio poster will document design events at a comprehensive university. Interior design students analyzed greenspaces working with a landscape architect, provided programming research for the renovation of an academic building, evaluated first floor/main entrances of different buildings to study the impact of the elements and principles of design on user behavior, and students will help to develop the instrument and participate in a post-occupancy evaluation (POE) spring semester 2022 on the aforementioned academic building. The Poster presentation will expand visual documentation referenced below from the Appendix. For the greenspace project, students conducted focus groups and collected data from classroom settings (Appendix Image 1). After they presented their findings and suggestions to campus planning, they led focus groups with student government members, veterans, students with disabilities and a collection of transfer, graduate, and international students to gather multiple student user perspectives (Appendix Image 2). The success of this project supported student input for a building renovation. In the academic renovation project in 2016, interior design students conducted research to support a renovation of a 1960s classroom building as charged by the campus architect. The instructions were to investigate and develop ideas to improve the building experience for students, visitors, faculty, and staff. Interior design students observed entrances and spaces at different times of the day, visited classes for student input, and each student documented an issue and provided researched recommendations in a group presentation to member of campus planning (Appendix Images3, 4, & 5). From the observations, each of the 16 students was assigned an issue to further evaluate and present possible solutions. Recommendations included maintenance of traditional finishes, exterior seating, adding a student lounge, updating corridor lighting, and establishing a color

coding system to support wayfinding from exterior graphics, hallways, and signage. Student work was instrumental in the proposal for renovations completed in 2019 (Appendix Images 6, 7, & 8). To engage foundation students in design awareness and evaluation, a campus tour assignment was expanded fall 2021. The assignment incorporates Ching's work on how approach, entry, and circulation are critical design decisions shaping the user expectations and experience (2015). The role of the elements and principles of design to modify behavior were studied through documentation, sketching, building analysis, and wayfinding mapping of select campus buildings (Appendix Images 9 & 10). Using a campus map, students identified building plan types using Ching's five spatial organizations (2015). The importance of the POE. to evaluate success of the design intent and to inform future building objectives is a critical tool for students to understand. In many respects, WELL recertification after three years and Living Building Certification after one year of occupancy, support the theoretical intent of the interior design POE to continuously improve the interior built environment for health, welfare, and safety. Next semester, students in a design process studio will conduct a post-occupancy study on the classroom building with faculty and staff. The findings will be included in the poster presentation.

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Image 1. Greenspace Project Responses to What would you change about the greenspace on campus.



Image 2. Interior Design Student (in yellow) facilitating greenspace planning with diverse student population.



Image 3. Academic Building Analysis Fall 2016 Question: *What do you like about Building X*?



Image 4. Academic Building Analysis Fall 2016 Question: What do you dislike about Building X?







Image 6. Academic Building Left: Stairwell landing graphic before and landing graphics after renovation.



Image 7. Academic Building Left: Exterior Courtyard after graphics to identify building entrances. Right: Furniture (central court furniture addition and picnic tables in covered area.





Image 8. Academic Building Left: Interior graphic wayfinding with linear graphic. Right: Corridor intersections painted to coordinate interior corridor and exterior courtyard graphics.



Image 9. Fall 2021 Analysis of Student Union First Floor in Foundation Studio



Image 10. Fall 2021 Analysis of Student Union Lobby Area in Foundation Studio.

### Scholarship of Teaching and Learning | Social and Environmental | Poster

### Multi-disciplinary Studio in Unfamiliar Territory

### Hojung Kim, University of Tennessee

### ABSTRACT

Multidisciplinary studio performed extensive research to develop a hypothetical thesis to identify the ongoing social, environmental, and climate issues in Las Vegas. Both Architecture and Interior Architecture students were asked to examine the city and surrounding ecological landscape to discover problems and issues that were reflected in current climates and ongoing technological development. During the initial stage, a range of studies and topics included history, politics, economy, real estate, sociology, psychology, philosophy, and literature of Las Vegas. Then, collectively, issues and problems were identified and illustrated in a series of diagrams. Peter Gates mentioned in The Importance of Diagrams, Graphics, and Other Visual Representations in STEM Teaching: "we live in a world that is increasingly influenced by graphical and visual images, and by greater use of visual means of communication." Furthermore, "Studies of graphical and textual use from a psychological perspective have already provided us with evidence that each is processed differently in the brain." The design process and illustrations were translated into a drawing format. Drawing diagrams helped students group the information and organize the data into a simple structure. It was an essential part of the design process to comprehend the complexity of the subject and not to disregard the core information. After collecting charts and analysis of the research, they were transcribed into a physical bounded book, and the studio traveled to Las Vegas. Students had a chance to explore the area and interview employees from different tech offices, ecological centers, and the city planning departments. After returning from the trip, the students were divided into teams to analyze and develop solutions for some of these discovered issues. Then, the students came up with architectural programs and suitable sites for their projects. After the midterm, the focus shifted to develop schematic-level drawings. During this phase of the project, architectural, technical terms were discussed to address the practicality of the projects, such as sections, plans, and details.

Towards the final, there was a strong emphasis on architectural graphics to develop drawings into a more detailed, presentational level. At the beginning of the research stage, students' depth of discovery was limited by Google search. During the initial phase, the search engine was an introductory resource with scholarly information and articles. But there were encouragements for students to find journals, essays, literature, and films to understand the subject to cross-reference and rediscover more in-depth information. In such a way, it provided opportunities for students to find concrete evidence based on scientific data, news, and numeric graphs to comprehend their logical narrative. The initial research helped students to develop a project in an area where none of them had familiarity. The ecological landscape of Las Vegas was unfamiliar territory, but they were able to observe the city from an outsider's perspective. In contrast, this unique opportunity helped students to understand their surrounding environment consciously. In preparation for the professional world, the multidisciplinary studio was not divided by student's expertise but discovering problems and coming up with solutions for unknown issues. The course challenged the team discipline by integrating Architecture and Interior majors and collaborating as a single entity. Rather than separating two majors with two different tasks, there was a continuous discussion and contribution to emphasize the role of each member. The benefits of a multidisciplinary team were to synthesize and incorporate ideas from multiple perspectives and disciplines.

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Clark County Water Reclamation District \* Bar Screen Removes large objects from wastewater UV Disinfection System Disinfects water containing bacteria and viruses Solumo; Las Vogas Review Journal Andritz Centrifuge \*\*\*\*\*\*\*\* Machines Used for separation of fluids

Aeration Basin .....

TEMPERATURE AND RAINFALL

Adding air into water for biodegradation

Source: Las Yegas Review Journ



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## THE GREAT BASIN CHIHAUHAN SONORAN

MOJAVE

SAHARA



31









SPECIFIC HOTEL FOCUS WYNN LAS VEGAS LAS VEGAS, NEVADA







"Wynn Resorts holds more Forbes Travel Guide Five-Star Awards than any other independent hotel company in the world. Our resort offers award-winning restaurants, exciting entertainment and ightlife, two award-winning spas, salens ind luxury shopping. Our commitment to making every visit a once-in-a-lifetime experience to our guests is what makes us who we are."

256

THEMES AND INTERIORS







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UNDERGROUND VIEW











Circulatio





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LEVEL 1 -12'-0"



LEVEL 2



















RL000 SYSTEM DIAGRAM



CLAR PANEL DIAG











01 entrance 06 cale 01 reception 07 bodietore/git shop 03 loungesteps 08 offices 03 ehibbion 09 retrome 05 ehibbion 10 general/beloonies 11 reception 12 exhibition 13 restrooms 14 officer 15 destrooms 10 beloory



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### Home Spaces Used as Third Places During the COVID-19 Pandemic Among Older Adults Living in the U.S.A and in Brazil

Gabriela Pereira, Illinois State University Mihyun Kang, Penn State University Dongniya Xiu, Illinois State University

### ABSTRACT

The term third place was initiated by the sociologist Ray Oldenburg, representing places where people enjoy sharing beyond home (first place) and work (second place). Third places are selected for community development and residents' relaxation and socialization (Kopec, 2018). Since the COVID-19 pandemic and the social distancing restrictions, place identity has started to shift – besides first places, homes have become second and third places when using technology. In our first places, since the 1950s and becoming a design trend after the 1990s, the open floor plan concept that integrates the different social areas of living, dining, and kitchen, promote socialization between residents and guests within the home (Singer, 2016). However, this has been changed when the COVID-19 pandemic arrived and suddenly, we all had our social spaces empty from people outside the household. Research in this last year has shown that during the COVID-19 pandemic, loneliness among older adults was aggravated due to social restrictions (Brooke & Jackson, 2020). As an existing problem among older adults, loneliness, and isolation impact their overall health and quality of life (Brooke & Jackson, 2020). In a way to overcome social isolation, Chen and Ge (2020) have discussed that online technologies potentially help diminish the effects of social isolation of older adults, keeping them connected to friends and family outside their household. The purpose of this study was to examine interior spaces used for social interaction when using technology for socialization during the COVID-19 pandemic. A total of 13 video interviews were conducted with older adults aging-in-place in the U.S.A. and Brazil. Participants' ages ranged from 65 to 86. The U.S. residents live by themselves or with

partners. In Brazil, one participant lives with children; all others live with partner. The video chat software used for the interviews varied between Zoom and FaceTime in the U.S.A, and WhatsApp in Brazil. The interviews took between 30 and 50 minutes. Video recording of the interviews was used for transcriptions for the analysis. Descriptive statistics summarized the gathered demographics, and the computer software NVIVO was used to code the interview transcripts. Results showed that older adults started to utilize other interior spaces for social interaction when using technology in the home. In the U.S.A., besides the living room, home offices, basements, grandchildren's playrooms, and laundry rooms started being used for socialization. The reason these locations were chosen depends on the comfortable setting, applicable laptop or smartphone placement, and appropriate lighting. The kitchen and bedrooms were not mentioned. In Brazil, besides the living room and the kitchen, bedrooms were used by most of the participants. The reasons behind the choices were first based upon the modem and router locations in the house, as being near them helped with connectivity. Second was the seasons and the weather, as the Brazilian houses do not have central air conditioning and heating. So, socialization using tech devices would happen in the living room or bedroom because these places are usually the warmer places in the home or the places where air conditioning and fireplaces are located. The third reason was the household structure. Older adults living with one of their children would prefer having a conversation using tech devices in their bedrooms because of privacy and lack of distractions and sound around them. As Brazilian houses do not have basements, and it is rare to have a designated home office space, those areas were not mentioned. All participants shared that technology has helped them to be socially engaged during the COVID-19 pandemic. Even though they want to be able to return going to their preferable third places or having guests at their first places, they see these measures as temporary and are glad to be able to keep their social engagement using technology.

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### Scholarship of Design Research | Open Track | Poster

### Interior Design and Historic Preservation as Methods of Community Stabilization

Patricia Lamb, Virginia Commonwealth University

### ABSTRACT

MOTIVATION Well documented practitioners such as Jane Jacobs(1961), in the field of urban planning and historic preservation acknowledge that cultural identity is important to neighborhood stabilization and revitalization. Without it there is disconnection both emotionally and physically. Neighborhood stability is dependent on ownership and buy in of the people who live there. (Jacobs J. 1961) Historic preservation strives to bring this stabilization to neighborhoods by the adaptive reuse of vacant buildings rather than demolition. Detroit urban planner Tricia Demarco stated "Whether buildings in a neighborhood are cared for, determines whether the next person will care." ISSUE City Point is an area known for its history, dating back to 1609 and earlier. Its location at the confluence of two major rivers adds to its charm. It was the landing place of early settlers, a thriving port town, an important civil war location, a WWI munitions area, and now a Designated Historic District with a National Historic Battlefield Park. The district has several historic vacant buildings dating from the 18th to the 20th century, in need of ownership and new purpose. The area is mostly residential. The vacant buildings, a church, a school, a tavern and a gatekeeper's building, are destabilizing factors in a residential area. To move forward in the stabilization of such an Historic District, a cluster of these four buildings will be reinvented rather than removed. Thus, preserving history and place. Interior Design will reimagine them for residential use. A guiding principle of the design will be "eyes on the street, not turning your backs on the street".(Jacobs, J. 1961) People love watching other people.(Jacobs, J. 1961) This will encourage not only a safe environment, but an area where people are connected and have ownership. "The sight of people attracts still other people". (Jacobs J. 1961). METHODS A review of literature on the ties between Historic Preservation and Urban Revitalization, as well as a survey of the writings of architects and craftsmen, serve as a foundation for this study. Precedent studies will be conducted of the role of the interior

designer to bring these buildings back to life. Interviews with experts on historic construction will help gain enlightenment of historic craftsmanship. The Design will be informed by a study of definitions of "home" of the past and present and "eyes on the street" (Jacobs, J.1961) design. Interviews with an urban planner gives insight into perspectives on adaptive reuse on a national level, while interviews with the local Historical Society and City Planner will clarify local goals. RESULTS "Maintaining physical reminders of the past creates a deeper sense of place that enhances residents' and visitors' perceptions of a neighborhood". (Zahirovic-Herbert and Chatterjee 2011) There are benefits to the adaptive reuse of old buildings. Many older buildings exhibit quality construction techniques. "There is an increase in property value that results in a benefit to the local community through an increased tax base." (Coulson and Leichenko 2004). People who live there benefit emotionally from a continuing community, rather than demolition and replacement. (Jacobs, J. 1961) REFLECTIONS Historic buildings are connected to place and help preserve history. There is a sense of patriotism that comes with the preservation of our culture and history. (Coulson and Leichenko 2004). The people who live there can maintain some ownership. These buildings, when saved from demolition, help preserve cultural identity and stabilize the neighborhoods where they are located. Eyes on the Street Design will help maintain a safe and secure environment.

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### Scholarship of Design Research | Open Track | Poster

### Design Factors Affecting Music Students' Practice Duration and Quality in Higher Education

Aiyana Demmons, Georgia Southern University Beth McGee, Georgia Southern University

### ABSTRACT

There are a variety of established criteria for music room design, such as reverberance, fullness of sound, and timbre must be taken into consideration when designing spaces for classical musicians (Gade, 2015). Wellbeing and sound are related design factors to consider for enhancing a music practice experience. According to Gade (2015) "As in many other aspects of life, "balance" seems to be crucial for the room acoustic well-being of musicians: balance between own and other sounds, balance between clarity and fullness, balance between what you hear directly from others and from the hall and balance between the room response in different frequency regions" (p. 233). Other elements to be taken into consideration are for the space to not hinder the tonal range of instruments as well as to use acoustical design materials like exposed wooden surfaces to provide a sense of warmth in relation to the materials used in the production of certain instruments such as the wood in stringed instruments. Scharer and Weinzierl (2015) add that tempo and dynamic strength, or how much strength a musician puts into their playing, are affected by room acoustics. The Acoustical Society of America (n.d.) recommends STC levels for music rooms. While there are guidelines to address interior sound acoustical design features and basic sound transmission levels and reverberation, this study looks to add guidelines for understanding how size, location, and acoustics together affect the duration of time spent inside of higher education music practice rooms and the quality of visits. This project includes three phases in a mixed method design. The first phase uses an online questionnaire of music students at a United States university to identify the current rate of usage and perceived quality of the music practice rooms in the music building. The second phase is

informed by the first phase with a building assessment that documents the existing acoustic performance and design features present that either increase or decrease the use of these spaces. Using the first and second phase, we identify the best and worst performing rooms acoustically for a variety of design features such as size, location in the building, daylight, furniture, and sound transmission measurements. The information from phase one and two will be synthesized into design guidelines which will be used to create a proposed prototypical design solution for the practice room spaces. The guidelines and design will be further verified through multiple focus groups with music students. This project has received IRB approval and is beginning data collection. Some preliminary issues include students hearing other people playing through the walls when they are practicing and excessive noise in the outside hallways. Also, the location of certain rooms, particularly the grand piano and percussion practice rooms, can make it hard for other instrumentalists to concentrate on their own playing due to the excessive noise. It is expected to find the need for a design that is different from the existing spaces in order to increase practice duration and quality. This design may include changing wall assemblies, location of windows and views, and types of interior finishes. The practice rooms in the music building are used daily by music students to practice their instruments, with some students even using the spaces for extended periods of time. With this being the case, it is necessary to develop more comprehensive design guidelines for these spaces to foster the needs of the occupants in terms of well being and acoustics.

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# Design Factors Affecting Music Students' Practice Duration and Quality in Higher Education

## Topic/Issue That Will Be Addressed

- Identify the current design factors of music practice room spaces on a University campus that both increase/decrease music students' use of theses spaces and their overall practice quality
- Goal: to help determine practice room design guidelines to increase practice duration and quality for music students in higher education

## Why is This Important?

- important issue because the practice rooms in the music building are used daily by music students to practice their instruments, with some students even using the spaces for extended periods of time.
- Wellbeing is important since these students will be spending a lot of time in the space; acoustics and room size important for getting the best sound quality from their instruments within the space.

## Why is This Important? (cont.)

- Various room sizes and locations make it convenient for students to choose their practice room preferences.
  However, location of certain rooms, particularly, the grand piano and percussion practice rooms, can make it hard for other instrumentalists to concentrate on their own playing
- There is the issue of acoustics in the practice rooms; the acoustics inside of the rooms are generally good. However, some preliminary issues include students hearing other people playing through the walls when they are practicing and excessive noise in the outside hallways.
# How Do You Propose to Answer the Question or Approach the Topic?





- First phase: qualitative; online questionnaire. This method is used to identify the current rate of usage and perceived quality of the music practice rooms in the music building.
- Second phase: quantitative; documents the existing acoustic performance and design features present that either increase or decrease the use of these spaces. We identify the best and worst performing rooms acoustically for a variety of design features such as size, location in the building, daylight, furniture, and sound transmission measurements.
- Third phase: qualitative; information from phase one and two will be synthesized into design guidelines which will be used to create a proposed prototypical design solution for the practice room spaces. The guidelines and design will be further verified through multiple focus groups with music students.

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## Understanding Student Perspectives of University Counseling Centers

Rachel Jupina, Washington State University Alana Pulay, Washington State University Minyoung Cerruti, Washington State University Andrew Parker, AIA Spokane

#### ABSTRACT

Many college students from ages 18-24 struggle with mental health. According to a study by Xiao and his colleagues (2017), 96% of surveyed college counseling directors believed the number of students with psychological problems was an issue on campus. College counseling centers are the biggest resource that students have; however, many students do not seek help from a professional and do not follow through with the treatment recommendations from their counseling center (Miranda, et al., 2015). Many students also reported a preference for dealing with problems on their own as well as a fear of stigma in going to see a professional. Studies on other healthcare facilities suggest creating an environment that mimics a normal community setting by utilizing the following principles: seating arrangements, open floor plan and positive distractions. There should be access to a mix of seating arrangements and a move away from institutional feeling furnishings (Connellan et al., 2013). Users should feel impowered within the space and have a sense of autonomy and control. The floorplan should be open and there should be a choice of wholesome things for the patient to do (Shepley et al., 2014). Biophilia and the access to positive distractions also play a strong role in improving patient mood and reducing anxiety. Allowing there to be views to the outdoors, natural art images and access to gardens all help to reduce stress (Shepley, et al., 2014). While these principles from healthcare studies can be applied to counseling center interiors, (Shepley et al., 2014), none address the impact of the physical environment on the stress and stigma that keep students from using this important campus resource. In addition, current knowledge of healthcare environments has mainly

stemmed from pediatric and geriatric patient populations and in other healthcare settings. Thus, there is a need for an environmental study of college counseling centers, since our inadequate understanding of how college students perceive interior features contributes to the failure to eliminate fear of stigma and stress in the use of counseling centers. To address these issues, Roger Ulrich's Theory of Supportive Design is utilized in this study. This theory has three components – sense of control, social support, and positive distractions that are likely to promote wellness and coping with stress (Ulrich, 1997). To identify the best design features, four case studies were analyzed and elements were applied in the research setting of a counseling center (Refer to Table 1). The elements were implemented into photo renders to compare a current counseling center to a re-designed one (Refer to Figures 1&2). First is sense of control, this relates to how much privacy the user feels. This is done through partitions, material selection that defines space, and furniture that allows privacy. Social support allows individuals to connect to the people around them. Seating arrangements of smaller groupings that support conversation were implemented. Lastly, the final component is positive distractions. Positive distractions can be used in many ways, in this study nature images and graphics and views to the outside were implemented. This on-going study redesigns a college counseling center in the Pacific Northwest region based on a survey being administered to 5,000 enrolled students on campus (Refer to Table 2). The survey investigates impacts of the aforementioned design features on participant perception of stress and sigma by comparing the current counseling center and the new redesigned center. The survey virtually simulates the following spaces for current versus new redesign: the entry, the waiting room, a counseling room, and a group counseling room. Results of this study will indicate what design elements are significant to reduce college students' stress and stigma and how those elements can be used in the future when it comes to designing college counseling centers.

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| Table 1: Case<br>Studies                                  | Architecture   | Interior   | Ambiance   |
|---|--|--|--|
| McLeod Tyler<br>Wellness Center                           | -Large windows with access<br>to natural light and views<br>-Curtain walls<br>-Shading elements<br>-2 levels<br>-New build       | <ul> <li>-Use of natural materials</li> <li>-Wood and earth tones</li> <li>-Gathering spaces for students</li> <li>-Yoga classes, meditation rooms, massage</li> <li>-Counseling rooms</li> <li>-Group counseling rooms</li> <li>-Stone flooring</li> <li>-Partitions for privacy</li> <li>-Multipurpose spaces</li> <li>-Pharmacy</li> <li>-70% of spaces have access to natural light</li> </ul> | -Water feature that can act as<br>white noise<br>-View to nature<br>-Playing with scale<br>-Place to stop between<br>classes   |
| Duke University<br>Student Wellness<br>Center             | -Large windows<br>-Curtain walls<br>-Shading elements<br>-3 levels<br>-New build   | -Counseling rooms<br>-Lounge rooms<br>-Gathering spaces<br>-High chairs that allow for privacy<br>-Use of natural materials-local wood<br>-Use of translucent materials for privacy<br>-Multipurpose spaces<br>-Wayfinding includes pictures from local nature<br>-Quotes from different cultures about wellness   | <ul> <li>-Living room feel</li> <li>-Privacy increases as users<br/>move up through space</li> <li>-Access to natural light</li> <li>-Views of campus/nature</li> <li>-Plays with scale</li> </ul> |
| UVA Student Health<br>& Wellness Center                   | -Brick exterior<br>-Large windows<br>-4 levels<br>-New build   | -Counseling rooms at top level<br>-Multipurpose rooms<br>-Living room gathering space<br>-Use of natural materials<br>-Flexibility of movable materials<br>-Culinary space<br>-Pharmacy  | -Living room feel<br>-Very open<br>-Access to natural light<br>and views<br>-Connects to nature  |
| SUNY Oneonta<br>Counseling, Health and<br>Wellness Center | -Large windows<br>-Partial brick exterior<br>-Concrete exterior<br>-Circular<br>-Older building renovated interior<br>-One level | <ul> <li>-Comfortable seating</li> <li>-Soft materials</li> <li>-Natural materials</li> <li>-Common colors</li> <li>-Bright interiors</li> <li>-Connects primary care and counseling</li> <li>-Separate waiting rooms</li> <li>-Group rooms-for therapy and activities</li> </ul>  | -Somewhat secluded on<br>campus but off main road<br>-Important to respect privacy<br>-Give patients a sense of<br>choice<br>-Dimmable lighting  |

## Figure 1: Survey Images

### **Current Entry**





### **Current Waiting Room**



## New Waiting Room



Variety of Seating Options (SOC, SS)

√More Privacy (SOC) Positive Distractions through graphic (PD)

## Figure 2: Survey Images

### **Current Counseling Room**



## **Current Group Counseling Room**



### New Counseling Room



Positive Distractions through artwork, views and plants (PD)

Seating arrangement and lighting allows for intimate conversation (SOC, SS)

## New Group Counseling Room



Positive Distractions through artwork, views and ceiling treatment (PD)

Seating arrangement allows group to be broken up (SS)

Variety of Seating Options (SOC)

## Table 2:Survey Questions

Please rate each of the following items on how they influence your perception of the space in terms of feelings of stress.

|                                       | Very Positive<br>Influence<br>1 | Positive<br>Influence<br>2 | No<br>Influence<br>3 | Negative<br>influence<br>4 | Very negative<br>influence<br>5 |
|---------------------------------------|---------------------------------|----------------------------|----------------------|----------------------------|---------------------------------|
| Privacy                               |                                 |                            |                      |                            |                                 |
| Artwork and/<br>or Views of<br>Nature |                                 |                            |                      |                            |                                 |
| Amount<br>of Seating<br>Options       |                                 |                            |                      |                            |                                 |
| Seating<br>Arrangements               |                                 |                            |                      |                            |                                 |

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## Resources Needed in an Incubator Space for Women Entrepreneurs

Stevi Eggers, Purdue University Barbara Young, Purdue University

#### ABSTRACT

Women are currently leaving the workplace in record numbers due to struggling to maintain a work/life balance. Women Entrepreneurs need resources and support now more than ever as they face the gender wage gap, harsh impacts of the COVID-19 pandemic, the United States' current caregiving infrastructure, and workplace inequality. "In September of 2020, 865,000 women age 20 and older left the workforce, compared to 216,000 men within the same age bracket." [2] Workplace imbalance issues have extreme importance as Yana Rodgers, faculty director for Rutgers Center for Women and Work, reinforces, "If women are underutilized or talent is misallocated, the GDP growth will be lower. That's bad news for the economy." [4] The intention to combat the current workplace inequality issues for women presented a need for an incubator space that provided spaces with the missing links to access work resources, educative instruments and workshops, childcare amenities, and innovative technology. "Work resources refer to those physical, psychological, social, or organizational aspects of the job that (a) reduce job demands and the associated physiological and psychological costs; (b) are functional in achieving work goals; and (c) stimulate personal growth, learning, and development (Schaufeli & Bakker, 2004). Hence, resources are not only necessary to deal with work demands and to "get things done," but they are also important in their own right (Hobfoll, 2002). [3] Dolcos and Daley's research encourages private and public organizations to develop initiatives and provide their employees with the necessary resources to help balance the amount of work-family problems they are experiencing. Additionally, these initiatives and resources will improve the negative impacts from these issues seen on Employers and society as a whole. In response to this reality, a community center with business incubator spaces was designed to support Women

Entrepreneurs. The two main objectives of this project were (a) to understand the resources and support needed for women to become successful entrepreneurs and (b) to design a community center with an incubator space located in Austin, TX. "In total, Austin has 1,433 women-owned startups..." and "across the country, 24.5 percent of the Nations startups are owned by female entrepreneurs, so —compared to the U.S.—Austin is ahead of the game." [1] Over three weeks, qualitative research was collected through three informal interviews via Email with working women in Austin, TX, and three case studies of existing women-focused community centers in San Francisco, Atlanta, and the Great Austin Area. A content analysis was performed by looking for similarities between the offered amenities presented in the case studies and those requested from the Interviewees. The analysis found women wanted networking connections, childcare, access to life/business strategy or financial management coaches, and most importantly the research exposed that incubator spaces were not part of the studied community centers. Results of the study indicated providing incubator spaces is a critical feature to support Women Entrepreneurs. Hence, the project created incubator spaces for Women Entrepreneurs of all demographics that provided the necessary resources to help women with all levels of expertise achieve their next career goal. This poster will present the research outcomes and a community center with business incubator spaces.

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## BACKGROUND

#### Women are currently leaving the work place in record numbers.

Women Entrepreneurs need resources and support now more than ever, from the gender wage gap to the harsh impact from our recent pandemic, women are struggling in all aspects of work/life balance and work place equality.

In September of 2020, **865,000 women** age 20 and older left the workforce, compared with **216,000 men** within the same age bracket. [4]

### **PROJECT MISSION:**

Design a community center for Women Entrepreneurs of all demographics that provides the resources and environment needed to help users achieve their next career goals.

#### Women-owned Business

Average annual revenue: \$228,578 in 2018 rose in 2019 to \$384,359 [5]

### **Male-owned Businesses**

Average annual revenue: \$473,157 in 2018 to \$752,154 in 2019 [5]

Entrepreneurship is on the rise by minority women.

There are now **12.3 million women-owned businesses** in the U.S., compared to 1972, when there were only **402,000** women-owned businesses. [1]

## CULTURE CONTEXT

## LOCATION: AUSTIN, TX

Ranked No. 2 in the nation for most Women-owned startups. [3]

## WOMEN OWNED STARTUPS:



## <u>CLIENT INTERVIEWS</u>

## **CLIENT A**

CURRENT PROFESSION: Interior Designer, Firm Owner AGE: 58 BUSINESS LOCATION: Austin, Texas

#### WHAT RESOURCES WERE YOU LACKING OR WISH HAD BEEN PROVIDED BEFORE STARTING YOUR BUSINESS JOURNEY?

I was a member of IBD and ASID at the time. I was also very involved in my community. My father was an iconic developer and I had lots of support.

#### IF YOU WERE A MEMBER OF A WOMEN ENTREPRENEUR COMMUNITY CENTER, WHAT WOULD BE YOUR BIGGEST DRAW TO USE THE CENTER or "START UP" RELATED" AMENITY?

If you are a one person shop you need connection. Design requires multiple perspectives and having a group available to bounce ideas off of is essential. Child care came later for me but would have been tremendously helpful as I ran back and forth from my office to house to relieve babysitters.

#### AS A WORKING WOMAN, WHAT DO YOU WISH THE CURRENT "WORKING WORLD" DID BETTER TOWARDS WOMEN?

I have seen limited bias towards women in my world. You have to fight for what you want and not be afraid to ask for it.

#### WHAT IS ONE WORD THAT REPRESENTS YOU AS A WOMEN ENTREPRENEUR? Inspiring.

### CLIENT B CURRENT PROFESSION:

Owner of a high end residential and multi-family interior design firm AGE: 26 BUSINESS LOCATION: Austin, Texas

#### WHAT RESOURCES WERE YOU LACKING OR WISH HAD BEEN PROVIDED BEFORE STARTING YOUR BUSINESS JOURNEY?

I wish I had hired my business/life coach on DAY 1. I also wish I would've hired my accountant day 1.

IF YOU WERE A MEMBER OF A WOMEN ENTREPRENEUR COMMUNITY CENTER, WHAT WOULD BE YOUR BIGGEST DRAW TO USE THE CENTER or "START UP RELATED" AMENITY? The two I mentioned above. Business strategy/money management coach

and access to an accountant.

#### AS A WORKING WOMAN, WHAT DO YOU WISH THE CURRENT" WORKING WORLD" DID BETTER TOWARDS WOMEN?

I think this needs to be discussed more. I think we focus so much on gender but its more about learning and understanding personalities around you and how to better work with different personalities.

### WHAT IS ONE WORD THAT REPRESENTS YOU AS A WOMEN ENTREPRENEUR?

Kind. Being kind is important, kind but STERN.

### CLIENT C CURRENT PROFESSION:

Health Care Occupational Therapist DESIRED START UP PROFESSION: Home Staging / Real Estate Agent AGE: 37

BUSINESS LOCATION: Austin, Texas

#### WHAT RESOURCES WERE YOU LACKING OR WISH HAD BEEN PROVIDED BEFORE STARTING YOUR BUSINESS JOURNEY?

I got into health care due to the income difference. At the time, design was only a hobby and health care was seen more as a career path.

IF YOU WERE A MEMBER OF A WOMEN ENTREPRENEUR COMMUNITY CENTER, WHAT WOULD BE YOUR BIGGEST DRAW TO USE THE CENTER or "START UP RELATED" AMENITY? Networking and meeting connections within the field of design. I wanted to do home staging, but didn't know how to go about it or where to start.

#### AS A WORKING WOMAN, WHAT DO YOU WISH THE CURRENT" WORKING WORLD" DID BETTER TOWARDS WOMEN?

I wish that there was more respect for women and that we are as smart and equal to men. I never felt it until I was in corporate America in my last job. I was treated as if my ideals weren't as good in was a male dominant company.

WHAT IS ONE WORD THAT REPRESENTS YOU AS A WOMEN ENTREPRENEUR? Adventurous.

## PROJECT GOALS

Provide essential resources and supportive environment for Entrepreneurs to thrive within the community

- Design for All ADA, Universal Design, Inclusive design
- Encourage Community Engagement and Safe Social interactions
- Sustainable and Ethical design approaches
- Inspiring and Rejuvenating aesthetic appropriate for Female Entrepreneur Community Members

## IMPLEMENTED INTO THE DESIGN

#### **ENTRY - RECEPTION**

A fresh and inviting space that welcomes our community members and staff to the WE Center. A space to lounge and enjoy conversations, with a radial circulation path to easily navigate the guests to the administration, interactive, or cafe spaces.

#### **INTERACTIVE SPACE**

The main component of the WE business community center provides essential resources such as a neworking area, shark tanks for investing opportunities, incubator shops and child care services. The multi use space was inspired by actual client interviews and feedback.



A place filled with good food and great conversation. Flexible seating accommodates the overflowing crowds from the amphitheater or can be removed to abide by social distancing and safe smaller gatherings. The cafe is where our entrepreneurs rejuvenate and feed their minds!

#### **AMPHITHEATER**

Creates a place where guest speakers and community members can have informal workshops and presentations. Flexible seating can be adjusted with the crowd size and provide safe circulation between community members. The WE amphitheater provides a sound absorbing and sustainable design approach with a biophilic natural wall.

#### **COMMUNITY ROOM**



These unique shops temporary house start up business, at no cost to the owner, to launch, support, and stabilize their companies. As the retail feature of the WE center, these shops allow the display and purchase of items that the women owned businesses provide.

**INCUBATOR SHOPS** 



#### **ADMINISTRATION**

The administration office is stacked for public and private access from the first to second floor, creating easy circulation for workers. A main floor reception greets guests with refreshments and lounge to wait for meetings. The staff is encouraged to use the collaborative spaces and lounge room for safe social engagements.

#### **OFFICES**

A mix of private and open office spaces allow for a variety of work spaces, seating and file storage. Movable furnishings and a flexible space plan allow safe circulation and social distancing. (\*) Designing for all, the elevator is easily accessible by staff and community members.



INTERIOR PERSPECTIVE

## BUSINESS INCUBATOR

#### **Definition:**

An organization designed to accelerate the growth and success of entrepreneurial companies through an array of business support resources and services that could include physical space, capital, coaching, common services, and networking connections. [2]



#### INTERIOR PERSPECTIVE

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## Building Community: An Investigation of Libraries as the New Third Place

Stephanie Wilburn, Virginia Commonwealth University

#### ABSTRACT

Motivation The U.S. economy and democracy and the health and happiness of citizens depends on maintaining social capital, the networks of bonds between community members. Social capital creates the trust that facilitates action and cooperation for mutual benefit. Since the 1960s, there has been a decline in-person socialization and social bonds both within and between demographic groups in the US resulting in reduced social capital (Putnam, 2000). One measure to combat declining social capital is creating third places where incidental and repeated social interactions create and reinforce bonds between community members (Oldenburg, 1997). With the reduction of accessible and inclusive public third places, many libraries have responded by adapting to act as community hubs. Libraries have updated their archetypal interior design and programming to be a contemporary third place. In a recent Pew Study 90% of Americans ages 16 and older said that the closing of their local public library would have a negative impact on their community (Pew Research Center, 2020). Issue This research will examine how interior design can establish and reinforce bridging and bonding social ties for the purpose of strengthening community and social capital. The interior design of a library acting as a third place will focus the investigation. Some expected avenues of research include how placemaking - the reflection of the community's identity in a place, and participatory design - the involvement of the community in a meaningful way during the design process, impact the success of a third place. Methods Current literature regarding social capital, the spatial characteristics of third places, participatory design, and placemaking will be reviewed including Putnam's "Bowling Alone", Oldenburg's "The Great Good Place", and Klinenberg's "Palaces for the People". A precedent study will compare and contrast two existing libraries that act as community centers. The selected libraries are the Francis A. Gregory Neighborhood Library by Adjaye Associates in

Washington, D.C. and the Fairfield Library by Quinn Evans in Henrico, VA. Interviews will be conducted with the library's architects, head librarians, and a sampling of library users. Direct observation will be conducted to examine common activity types, circulation patterns, user interactions, and user's adjustments to the spaces. The libraries will be studied with a focus on how participatory design and placemaking were used in their development process and their success at meeting the new demands of third places. Preliminary Results Placemaking requires that a space has meaning to its users. When a place has meaning to its users, the space becomes part of the community members' self-identity. This creates an attachment to the place and reinforces the members' belonging to the community surrounding the place. Place attachment and the sense of community promotes health, safety, social interaction, mutual aid (Hull, 1992). Community participation and co-production in the planning and design process based on Arnstein's ladder of citizen participation increases the likelihood that a sense of place within the host community will be developed as an outcome of the planning and design process (Ellery, 2019). Successful third places often have the following characteristics: active, accessible, available as needed, inclusive of diverse populations, flexible, permeable to the outside, and containing ample seating. Conclusions Based on these results, this project will study how a library can be designed as a third place that fosters connections, builds community, and restores social capital. Through the study of the precedent libraries the design will suggest an effective way to employ participatory design, placemaking, and best practice spatial characteristics of third places to create a successful community space.

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## Use of Gaming Program Unity for Interior Design Virtual Reality 3D Modeling

Katherine Shalloo, Illinois State University Gabriela Pereira, Illions State University

#### ABSTRACT

Virtual reality or VR is an interactive, integrated, and life-like 3D virtual environment built using computer hardware, software, and various sensors (Li, 2015). With more advancements in the gaming industry, VR started being used in other fields, including Interior Design, in the past decade. HOK and Gensler are examples of companies that provide VR experiences to their clients (Quirk, 2017). With the rise of VR in the Interior Design industry, interior design programs in universities across the U.S started implementing VR in their curriculum, like studio courses or specific courses focusing on emerging technologies (Ahmad et al., 2020). Interior Design students generally learn to develop their 3D models using Autodesk Revit and/or SketchUp and use an extension (i.e., Enscape) to experiment their environments using virtual reality. However, while allowing students to visit their spaces virtually, this approach lacks human factors evaluation. While one can walk around the virtual environment, one cannot manipulate any element within the virtual space. Therefore, the purpose of this study was to create a virtual environment using the software Unity Pro with the long-term goal of developing a Human Factors Virtual Lab. Unity is "a creative hub for artists, designers, and programmers, that enables rapid editing and iteration in your development cycles, with real-time previews of your work. You can create 2D or 3D scenes, animations, or cinematics" (Unity Technologies, n.d.). Unity was mainly used to create games but has expanded into other fields such as music, interior design, architecture, and product engineering. For interior design, Unity allows people to fully interact with the environment created. This means that people will not only be able to walk through the space but also manipulate items within the space. Unity can be used to test out designs for human factors due to a multitude of different constraints that can be placed within a

project, simulating the mobility and reach dimensions, for example. An Independent Study was conducted including one faculty member and one student in the interior design program during the Spring and Summer of 2021. The first step included learning how to work with Unity, a new software for both faculty and student. The second step was to learn how to take a project that was built in Revit to Unity. The platform LinkedIn Learning was utilized for both steps. Then, the student used an interior design studio I project to transfer it over to Unity. Over seven weeks, the student used AutoCAD and Revit to update and build the project before exporting the file to Unity. Once the file was exported from Revit and imported into Unity, the student noticed that all materials (metadata) and some furniture did not transfer over. The solution found was to use the SimLab Composer software to help transfer over the metadata and furniture (Figure 1, Figure 2). After adding lighting back into the space in Unity, it was time to test the environment in VR (Figure 3). Virtual reality devices are simple to use and intuitive, so any user can learn to use them in few hours. Virtual reality devices are simple to use and intuitive, so any user can learn to use them in few hours. Virtual reality devices are simple to use and intuitive, so any user can learn to use them in few hours At the end of the independent study, the student was able to put the project from Revit and all its data into Unity (Figure 4). However, some of the VR functions did not work and will need more time exploring for solutions. The following steps would be to understand Unity and its VR functions better. Another step is to use Unity Reflect, as this software was launched after Unity Pro and promises to connect with Revit and Trimble. Overall, this experience has shown the potential in what VR can do for interior design and the level of interaction and experience it can provide to interior design students.

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#### Appendix Student Outcomes

#### Figure 1

Unity home screen with SimLab Composer models imported into Unity file.



#### Figure 2



All materials used in project loaded in from Revit and SimLab Composer.

#### Figure 3

Lights added throughout environment with Unity.



#### Figure 4

*Object selected can be moved with arrowheads.* 



#### Scholarship of Teching and Learning | Open Track | Poster

## Web-Based Instructional Tool Development for Lighting Deign Education

Seunghae Lee, Wentworth Institute of Technology

#### ABSTRACT

RELEVANCE and CONTEXT: Lighting design is one of the critical aspects of interior design education. Due to the recent rapid advancement in technological development in lighting industries, it is required for interior design educators to pay attention to the changes in luminaire designs, energy and environment issues, and new applications of design trends (Reddy & Stewart, 2021). And eventually, they need to reflect further information to educational content. Standard 12 of the CIDA 2020 Standards highlights student learning expectations in topics such as the environmental impact of illumination strategies and decisions, principles and strategies in lighting design, and competency in selections of luminaires and light sources (Council for Interior Design Accreditation (CIDA), 2020). TOPIC: This abstract is about a project that developed a web-based instructional tool with the intent to provide up-to-date information for students and educators in order to offer access to current design trends and strategies that are implemented in the industry. Another issue is that it is hard for students who are new to lighting design to imagine how the space would be when the designs are implemented in the space. In order to develop a learner-centered model, this tool, with the help of web technology, is created (Ankerson & Pable, 2008). PROCESS OF DEVELOPMENT: The original project was based on results from interviews with 12 lighting designers that asked about knowledge gaps between lighting designers and recent interior design graduates and led to a funded project. It was revealed that lighting design firms use many design strategies and technologies that textbooks or instructional resources cannot introduce because the lighting industry advances and changes so rapidly. The project has a three-year plan to fully develop the tool and make access available to the public, including educators and students. This poster presentation will report the first-year achievement and aim to be a venue to receive feedback from the audience to improve the project. See Figure 1 for the introduction page design of the website (titles were blocked to hide identity

information as required). Three lighting design firms joined as industry partners offering design projects, details, and professional feedback. The web-based tool had been developed and open to industry partners for feedback. Based on those feedbacks, the design and structure have been updated and used in a lighting design course at the author's institute as a testing bed. This webbased tool offers images and data that can explain specific lighting design strategies in a multifaceted way so students can connect the dots to understand the design entirely. Various pull-down menus are at the top to look up the design through different approaches (Figure 1). For example, if a student wants to know a wall slow (graze) design in recent and real applications, the student can choose to see an example that shows the installed image, detail, and the luminaire schedule in one place (Figure 2). Students also can see a bigger image to read details better when they click the links. Students can review different design strategies such as cove (Figure 3), wall washer, or daylight (Figure 4). Conclusions: Updates that were made based on feedback include 1) adding resources for energy and environmental design such as energy use calculators, 2) connecting to lighting design organizations such as LYTEI and DLF, and 3) some minor changes in web design for more interactive features to include. Engagement: This poster presentation session is proposed to foster an opportunity to exchange ideas to enhance the delivery of lighting design strategies. The visual communication through the poster and the interactive device to demonstrate the use of the tool will help engage the audience.

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Figure 1.

Lighting -

About Projects Designs Luminaires Distributions Resources

# lighting design students, educators, and professionals.

Funded by

Supported by

offers resources for current lighting design strategies, cutting-edge lighting technologies, and sustainable and energy-saving design guidelines and

#### Figure 2.



#### Figure 3.



#### **Installed** Image

Faux skylights were constructed in this dwelling with a pair of coves and a solid band in the center, containing and concealing HVAC.



Detail

FILE



L6: See the Fixture Schedule

Low glai with the comfort Figure 4.





## **Installed** Image

#### Scholarship of Design Research | Practice | Poster

## Early Elementary Classroom Spaces for Active Learning Strategies

#### Rachel Bannister, Florida State University

#### ABSTRACT

The purpose of this research is to understand the built environment's impact on active learning strategies for diverse disciplines in public school early elementary education settings. Early elementary schoolteachers are challenged with teaching multiple subjects within a single classroom space. This research aims to uncover design's impact on teachers' use of spaces supportive of active learning strategies including traditional classroom environments and alternative spaces such as outdoor classrooms. This research seeks to identify how teachers navigate this routine shift from discipline to discipline within their classroom and how alternative environments help to ease these transitions. The transition to formal instruction, is often the most significant in the life of a child and recently the leap from active to sedentary learning has increased due to added state mandated learning standards for each discipline (Fabian & Dunlop, 2007; Miller & Almon, 2009). Currently, meeting standards has become a priority for many resulting in lessened opportunities for activity in early-elementary education. Active learning builds social-emotional skills and provides opportunities for teacher-guided interactive learning essential for young students. However, increased pressure of meeting learning objectives, proves a struggle for teachers who strive to balance both active learning strategies and learning objectives required for each discipline given the same time and resources (Miller & Almon, 2009). The flexibility of learning spaces is a contributing factor for teachers' use of active learning techniques as design considerations of the physical classroom determine how a teacher plans activities for subject matter (Byers, Imms, & Hartnell-Young, 2014). In addition, alternative learning spaces, such as outdoor classrooms, supply many benefits for young students including access to nature for learning science topics in context, multi-sensory environments, and greater amounts of social opportunities – all of which contribute to active learning (Bennett, 2011; Kinsner, 2019). Outdoor learning environments not only afford potential enhancement of

indoor lessons, but have also been shown to reduce stress, promote sleep, and increase attentiveness (Kinsner, 2019). The built environment whether indoor or outdoor is capable of supporting play-based and active learning practices, equipping teachers with the adaptable spaces, layout, and technology they need as they push their students to reach learning milestones (Bennett, 2011). This poses an excellent opportunity for interior design to lighten the load for elementary teachers through the design of flexible learning spaces capable of accommodating active learning for objectives as early elementary teachers attempt to make a single classroom space function for multiple academic disciplines. A qualitative study will utilize focus groups with a convenience sample of (n=6) consisting of early elementary schoolteachers within an Arated, public elementary school. They will be asked to provide a percentage of active learning versus sedentary learning for core subjects: math, reading, science, and history. Further, they will be asked to provide narratives that explain their strategies for active learning within context. Original research data obtained from focus groups will provide the researcher with the programming criteria to design early elementary classrooms that support active learning for state learning standards. Results may have implications for early education public school learning spaces and could potentially lessen the variation amongst early elementary learning environments. Gaining teachers' perspectives of learning spaces will provide opportunities for evidence-based design in early elementary education settings. Consequently, this data will act as a reference for interior designers looking to promote active learning in spaces that house multi subject learning.

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#### Scholarship of Design Research | Diversity, Equity, and Inclusion | Poster

## Enhancing Empathy and Understanding in the Design Process

Holly Murdock, Utah State University

#### ABSTRACT

In a recent issue of the Journal of Interior Design, AJ Paron examined the effectiveness of design solutions and their impact on the people for whom they are intended. Paron wrote, "With the movement toward human-centered design, interior designers strive to create space for all, yet sometimes we do not understand how our designs are truly impacting others (2020)." This statement is a charge to be taken seriously, as interior designers are uniquely qualified to address and solve human problems. Paron continued, "To understand one another is to have empathy. We as designers need to keep this at the forefront of our design process to ensure equity and inclusion." This research seeks to find ways in which the design process can better incorporate human-centered design principles. It is hoped that a renewed focus on empathy and understanding can improve equity and inclusion in the built environment. Correlations exist between the architectural design process, design thinking, and systems thinking, though they are often treated as separate means of creative problem-solving. This ongoing study looks at the synergies between these methods to discover ways to improve the overall design experience for students, educators, practitioners, and clients. The architectural design process is defined by the steps of pre-design research and programming, schematic design, design development, construction documentation, and project administration. Each step is clearly defined in the profession and is often tied to contractual requirements for architects and interior designers (Ballast, 2021). Design thinking is a method of creative problem solving defined by the aspirational steps of empathize, define, ideate, prototype, and test. Its purpose is to innovate new solutions by addressing empathy and understanding early in the process to increase the likelihood of success (Hasso Plattner Institute of Design, n.d.). Finally, systems thinking, for

which design thinking is a foundation, is a form of analysis that examines individual parts of a process and finds synergies with the whole to predict behavior (Gharajedaghi, 2011). All three design methodologies have been recognized as essential to design education and are part of the Council for Interior Design Accreditation's Professional Standards 2020. Standard 8 Design Process requires that students execute the design process, and programs must expose students to methods of design thinking. Standard 4 Global Impact requires students to understand how systems thinking informs interior design practice (CIDA, 2020). This line of research seeks to integrate design thinking and systems thinking into the architectural design process to meet these CIDA objectives comprehensively and improve empathy and understanding. Paron concludes, "When you have empathy, you make different decisions and take different actions. Hopefully, the world will be better for those actions you make." Correlating these methodologies holds promise to improve the overall design process by focusing early on empathy and understanding and integrating these values throughout, and providing designers with the tools they need to change the world for the better.

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## PRESENTATIONS

## Authenticity Now: A Phenomenological Investigation

## Derek Toomes, UNC- Greensboro

## ABSTRACT

In Species of Spaces, George Perec (1974) characterizes habitable space as both concrete and indeterminate: "The space of our lives is neither continuous, nor infinite, nor homogeneous or isotropic. But do we know exactly where it breaks off, where it curves, where it disconnects and comes together? (Prière d'inserer section, para. 1)" The project Authenticity Now is an installation in which I reconfigured an existing gallery footprint by constructing two newly adjoining rooms, essentially a space within a space. Like Perec, I am interested in the phenomenological inquiry of invoking a physical interior space as an unfolding personal and experiential journey. I constructed the physical boundaries of a built space as a container for stories with a fluctuating or fluid temporality. I began by constructing two adjoining rooms; circumambulation would reveal the contents of both rooms as in a situational and oscillating conversation with one another. The use of digital intervention featured within the space, most often as simulation: screens showing live-feed surveillance video of the landscape imperceptible beyond the wall of the installation, posed seamlessly as windows and a 'view' from the space. This as a means to creatively interrogate the title term, Authenticity, and the manner through which we often assign it to mean the most rational and trustworthy version of first-hand experience. I populated this interior setting with dated ephemera, the doubling of objects, and the use of mirrors. Through this process, I evoked the repetition and circularity of time and place, as well as heightened the sense that the substitution of one likeness for another introduces a level of ambiguity into the concise inquiry of what is 'real' or 'actual'. Those visiting the installation, encountered their own subjectivity within mirrored surfaces, but were equally compelled to feel their objectivity as actors within the probable narrative suggested by the environment itself. In an adjoining room, an elaborate maquette simulated a tropical herbarium from which I made a documentary in the style of an early NOVA special. This played on a television from the 80's, in

the neighboring domestic/living space. I employed asynchronous technologies as unsettling interstitial devices to compress time, as well as reveal that intangibility and distance between points of action, are predominate characteristics normalized through our assumption of 'access' to events and stimuli through the provision of technology. At any point along this journey between the two adjoining rooms, viewers absorb concrete cues from attributes of the space, while elaborate substitutions and proxies for the actual obfuscate awareness of possible former iterations, as well as the likelihood of some future potentials experienced within the narrative of the interior environment. This, which echoes what Marshall McLuhan observed of media as medium(s) in his 1964 book, Understanding Media: The Extensions of Man, that through advancement, technology represents the augmentation of the potential of the self, and in doing so, expands the limitations of the self, making those previous limitations both hidden and obsolete. Our first act, or evidence of existence, is to occupy a space; phenomenologically speaking, this is how we learn information that we will later remember as experience and furthermore, project onto future iterations of livable environments. Thus, our relationship to interior spaces is indexical of our time, memory, and experience within them. As the narratives instigated by concrete spatial encounter show themselves to be organic in development and growth, so does our understanding of interior space as effectively boundaryless.

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## Authenticity Now: A Phenomenological Investigation Installation Images



Installation of constructed interior setting, view #1



Installation of constructed interior setting, view #2



Installation of constructed interior setting with open-threshold view of adjoining tropical herbarium set, view #3



Tropical herbarium set, view #4



Tropical herbarium set (detail), view #5



Detail view of simulated 'Nova Special' playing on '80's Television, with view of adjoining tropical herbarium set, view #6



Detail mirrored view of doubled sculptural bust, view #7



Detail of live-feed surveillance footage creating simulated window-view, view #8

## Creative Scholarship | Design as Idea | Presentation

## Future Heritage(s) of Toronto Chinatowns

Linda Zhang, Ryerson University

## ABSTRACT

[1.Conceptual Significance]: This design/build project and fourth-year undergraduate Interior Design Studio critically reexamines the relationship (or lack of relationship) between heritage and community through the case study site of Chinatown interiors. Through a community partnership, Future Heritage(s) tells the forgotten stories, willful omissions, and accumulation of silences that exist beyond the city's official heritage definition of its Chinatown neighborhoods. [2. Ingenuity or Novelty]: As American author, Toni Morrison once stated, "history is made by the definers, not the defined," (Morrison, 1987) and this project seeks to not only find new definers for Chinatown but also challenge what it means to "define" something in the first place. In so doing, this project seeks to embody what marginalized communities have known for some time-namely, that all that is written is not necessarily all that is, and what is remembered extends far beyond what is recorded. This presentation will explore two students interior scale design/build projects that challenge the disconnect between community life stories and state sanction narratives. They each propose contrasting alternative approaches to community heritage building that places life stories in dialogue with state-sanctioned narratives. [3. Visual Presence]: Both projects explore the visual presence of absence as a methodology to highlight forgotten histories and place them in dialogue with what has been recorded and officially remembered. Drawing from historical archives, oral histories, as well as 3D scans of present-day Chinatown, the visual presence of what is missing, is render as palpable as what is present. The visual presence of absence, negation, traces, and ghosting were used towards the goal of creating interior spaces which could be felt—elevating the role of lived experience within heritage practices as well as inclusive of community memory and knowledge. [4. Strength of Aesthetic Value]: Recent philosophy of memory suggests that memory is "irreducibly multiple" (Bernecker and Michaelian, 2017) and an act of "construction" not merely recollection

(Michaelian, DeBus, 2018)—history as "an accumulation of silences" (Goyanes, 2017). These philosophical insights suggest that current (state-sanctioned) heritage practices in interior design risk the erasure of marginalized communities in the construction of normative pasts. In response (and in contrast), the two design/build projects offer alternative heritage building frameworks that embrace memory's incomplete and dynamic nature as a means to elevate community ways of life, social memory, and the untold stories of the Chinatown community to contribute to larger questions of community, identity, and interior architecture. [5. Mastery in Craftsmanship]: As a design/build studio, craftsmanship was key to the success of the project as well as the lived experience of the interior installation. It was important for students to learn how to carry out a project from concept through to fabrication and construction. As such, both projects draw from the craft tradition in order to create interior installations and experiences that related to community histories. The first project uses textiles to reconstruct the first Chinese Laundry in the city. The second project uses porcelain slipcasting to give value to every day (overlooked) objects and heritage in Chinatown while paying homage to the Chinese ceramic tradition. These traditional craft techniques were combined with emergent technologies as a means of bridging past, present and future. Slipcast clay molds were made from 3D scans. Textile panels were cut on state-of-the-art large-scale Trotec laser-cutting technology. By mastering digital craftsmanship of the analog and digital, histories and silences from across time could be placed in dialogue through the creation of an interior space.

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Axonometric drawing of heritage installation 1 focusing on the informal instructure of Chinatown including the sidewalk street vendors, urban pop-up architecture and icon plastic basket and stools of Chinatown's sidewalkscapes



Plan of heritage installation 1 showing location of baskets, stools, street vinyl as well as fabrication methods (traditional craft, new technology, and hybrid).



Selected baskets including baskets found in Chinatown, 3D scans of baskets, slipcast plaster molds and cast porcelain baskets which precious. The plastic baskets in Chinatown are in use every day, yet their value in contributing to Chinatown's streetscape (or urban interior) and life is rarely recognized.



Here these forgetten pieces of heritage have been taken out of their uses, preserved in porcelain and displayed as a museum exhibit. However, in becoming an object of heritage, the essence of the basket has been lost: they can become vacant vessels incapable of fulfilling their original purpose.



A once-bustling street-scape and street life now turns to porcelain and put on display as 'heritage'. The baskets have become fragile: they must be handled with care, they cannot be moved, they cannot be picked up off the ground. They can only be viewed.



Elevation of heritage installation 2 (above) which reconstructs the first recorded Chinese owned business in the city (a laundry) which has no records except for the name of the business, the name of the owner, and the date of registration. Thus the interior is reconstructed from hanging textile fragments relating to the history of the site, from the only archival fragments which remain (below).



Photograph showing exterior of installation





360 degree virtual reality photographs taken from inside the installation showing the memory of the laundry suspended at the heart of the interior.



Video stills showing the view experience of walking through, in and around the installation

## Air Shield: A COVID-19 Response Respecting Contiguity of Humans Through Continuous Space

Barbara Young, Purdue University Jong Joo Sohn, Purdue University

## ABSTRACT

The APA (n.d.) defines contiguity as "the co-occurrence of stimuli in time or space. Learning an association between two stimuli is generally thought to depend at least partly on the contiguity of those stimuli." However, when stimuli and their corresponding boundaries are invisible, we do not readily perceive an adjacency and, therefore, do not recognize their association. It was this juxtaposition of invisible borders that falsely provided security for people positioned behind plexiglass panels and thin plastic face shields at the onset of the COVID-19 pandemic. Based on measurements for how far large, visible, respiratory droplets travel, these physical barriers were thought to provide protection (Morris, 2020). In May of 2020, a few months after the shutdown, a design partnership formed to consider solutions that would allow people to gather in workplaces again, without temporary barriers destined for landfills. Starting from the notion that all boundaries and borderlines are illusionary (Seif, 2019), we were driven by a realization that humans are physically connected through the space we inhabit, particle by particle. Simply stated, we share the air. Based in this conception, the design team developed a workplace solution that offered some protection while allowing workers to share space and interact without physical barriers that are counterproductive to collaborative workplace cultures. We designed a product that could be placed in a typical, densely populated, office arrangement knowing many smaller offices across the country would not be able to invest in major reconfigurations. Recognizing the variety of individual responses to the threat, we considered the office as a gathering place where some, but not all, people will fully comply with protocols at any given time and would probably need subtle reminders throughout the day. After iterating ideas for ondemand ventilation that proved too costly or unfeasible in existing buildings, the team developed a HEPA air filtration fan that could be clamped to any rigid, planar, surface such as a desk, shelf, or ceiling fin. Motion activated sensors automatically turn the fan on when people are present. Potentially contaminated air from the worker side is pulled into the custom dual-fan HEPA filter prior to being released in a column of air that acts as a layer of protection from small particles, or aerosols, crossing into the work area from the opposite side, like an air curtain. The fan will produce low levels of white noise in the open office setting with a quiet motor. For psychological awareness, the team also suggested kinetic design features in the office interior that move with air currents. An open grid ceiling over the workstation area, with small, faceted, concave, metal forms strung between the grids will subtly rotate with continuous air currents produced by the fan, creating a soft wave across the ceiling. This visual cue provides awareness that the fan is working without causing high levels of distraction at the worker eye level. Additionally, long strips of light-weight fabric are grouped along main egress routes. The team speculated some people might feel compelled to temporarily remove masks in these transient areas because they are not gathering places. Not only do the strips provide visual interest, they will sway with the movement of people, ventilation, and door operation, like leaves on a tree, as a constant reminder to be conscious of COVID safety protocols, because we share the air.

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# "AIR SHIELD"

Air Shield is an attachable dual fan and filter system which serves to purify air and protect desk occupants by blocking pathogen transmission with air currents. Fan systems filter a variety of air impurities, good for mitigating pathogen transmission and reducing allergies, as well as providing mild white noise for acoustic privacy in open office systems.



# BACKGROUND

Due to the Coronavirus pandemic, people should maintain physical distance to protect each other. The layout of the modern office, however, depends on space efficiency and communication with other co-workers. The goal of this project is to consider how employees can stay visibly connected while remaining protected in existing workspace layouts and consider how to use the solution sustainably after the corona pandemic.





# **MOTION SENSORS**

The system turns on automatically by motion sensors. The Sensor detects movements and activates the AIR SHIELD on the side.

# **AIR FLOW\_TOWER FAN SYSTEM**



Air currents are applied on each edge (Front, Left, and Right Side) of the workstation by a tower fan system. The fan systems can be installed easily on existing desk surfaces with clamps. This mechanism builds a safe individual workspace by blocking movement of the virus with air.

## **HOW IT WOKRS**



# FEATURES

Air Shield is easily installed and removed with two screw clamps. A simple push-button operation on the lower right-hand side of the unit powers on/off the Air Shield fan. Motion sensors detect when other people are present to start the air-flow. For example, if someone is sitting on the left side, Air Shield detects them and activates the air curtain from the left side.



## **DUAL FAN & FILTER SYSTEM\_OUTER FAN**



**DUAL FAN & FILTER SYSTEM\_INNER FAN** 



## EASY INSTALLATION



## EASY INSTALLATION



4/5



## 01 High-Density Office

High-density, small office environment with custom designed adjustable height desks where some, but not all, employees will strictly adhere to COVID protocols.

The Air Shield fan is illustrated at each station. A custom kinetic ceiling is suspended over workstation area.



# 02 Circulation

Light-weight, hanging, fabric strips move with air currents in circulation spaces.

These provide visual interest while acting as a subtle reminder that our bodies make waves that reach others.



# **03** Gathering Spaces



Like leaves gently blowing in the wind, light weight light sculptures over social areas sway to remind us we share the air.



### Creative Scholarship | Design as Idea | Presentation

## **Toward Context Sensitive Design**

Rene King, Columbia College Chicago

## ABSTRACT

Modernism as a general (rather than a historical) tendency can be characterized as the embracement and advocacy of an understanding of design which interprets the process as a functional answer to a question in a fixed problem space. However, modernism continues to face internal and external challenges, and a revision of some of the commonplace design processes might require a readjustment to align with the ongoing socio-historical revisions of our collective understanding. In fact, despite the pragmatic prevalence of modernist design, the design history is better characterized as a permanent dialogue, sometimes even competition of two parallel trends: one, a constant desire for radical renewal and another, a traditional preservationconservation principle, resulting in a process that relies on recombination of historically established formal patterns. We propose a design approach that can be described as the synthesis of modernism and tradition. This can be achieved by sensitizing the design process to the temporal and the contextual, in other words, the socio-historical, even the subjective and emotional aspects of the design object — whatever the scale and the medium. This is one of the central perspectives of context-sensitive design: instead of merely trying to create a solution for a particular need, the design process and object should be thought of as a single, intertwined entity, whose origins and results stretch further in space and time. This approach builds upon a definition of preservation presented by Kevin Lynch in What Time is This Place. "Preservation is not simply the saving of old things but the maintaining of a response to those things. This response can be transmitted, lost, or modified. It may survive beyond the real thing itself. We should expect to see conflicting views of the past, based on the conflicting views of the present " (53). The approach also echoes the writings of Christopher Alexander and the ways in which people have made order from their own world to create meaning. This framework also applies to the scale of the process: even the smallest objects are embedded in layers of larger and larger

contexts, which, in turn, are reflected in the various objects on various scales. To test this scalability and versatility of context-sensitive design, we will present two different insertions at the small and medium scale to demonstrate the process in locations with significant geographical and socio-historical diversity. First, we revisit an existing site-specific design installation by Pattern Project in a large North American city, demonstrating the practical applicability of context-sensitive design to capture the contextual complexities of our built environment in a small-scale, tangible artifact. Second, as an example of a medium-scale insertion, we investigate a space whose character and past is diametrically opposite the American example: the former Northern Maintenance Depot in Budapest, Hungary, a key institution of the Hungarian Railways and, thus, of mobility and state-driven industry in the Socialist era in Eastern Europe. This space is currently under refurbishment, soon to become the main site of the Hungarian Museum of Transport. The design of the space is tuned to fit the expectations towards a contemporary museum, linking objects to the interior as well as the building to the surroundings. A series of conversations organized by one of authors will take place on site in October to explore ways of using the context-sensitive design principles developed in the Pattern Project's earlier explorations. Using this methodology the authors aim to infuse the site with smaller-scale signifiers of its past, its societal, historical and emotional significance. Looking forward, the Pattern Project seeks to experiment at larger scales, leaving the realm of what can be individually experienced to explore the layered experience of the urban fabric.

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Abstractions based on the same site specific dataset (prototypes testing materiality and technology)



IDEC 2022 Proposal - Towards Context-Sensitive Design - Appendix 2/4



Installation views - In-situ and detail views

Toop row image credits: www.kozlekedesimuzeum.hu, www.archdaily.com,



Past, present and future visions of the European site of investigation

# Fabric Bridges: Experiencing Space at the Intersection of Color and Sound

Stephanie Sickler, Florida State University Karen Large, Florida State University Stephen Skorski, University of North Cararlina Greensboro

## ABSTRACT

An extensive collection of scholarship exists establishing a connection between color and emotional response (Mahnke, 1996). Music has also been related to color through emotional associations (Whiteford, Schloss, Helwig, & Palmer, 2018). Additionally, studies have explored the overlap of art and music, finding the pair to positively influence health and wellbeing (Cohen, 2009). However, little evidence exists which explores the curation of these experiences within the built environment to enhance the human experience in an enclosed space. The interior design profession exists at the convergence of these areas of study and as such enjoys a responsibility to thoughtfully explore the creative potential inherent in the intersecting disciplines. The creative scholarship presented in this abstract draws inspiration from the above lines of thought to create an immersive visual and sonic experience informed by the colors and patterns found in common interior building materials. The presented work is seen by the authors as an extension of the interactive spaces, objects, and sounds created by interdisciplinary designers such as Le Corbusier and Iannis Xenakis's in the Philips Pavilion, and Mike Tonkin and Anna Liu in the Singing Ringing Tree (Muecke, & Zack, 2007) The project began as an exploration of the embedded code within certain fabric patterns. This code (either analog or digital) is what instructs or guides the manufacturing looms to create unique woven patterns. From this code, multiple algorithms were created to systematically convert the information embedded in the fabric to musical notes. The music that emerged served as a road map for exploration of the deeper connection between people, space, color, and sound. Based upon literature which associated music genres to specific color sets (Whiteford, et. al, 2018), this
exploration paired designed spaces utilizing color schemes similar to the study's color sets with original music created from the textile code, following the music genres of the study. Where the precedent study had explored only color and music, this study explored how that color is manifested into designed spaces. The result is a clear connection that can be felt when viewing the designed space while listening to the composed sounds, supporting evidence which links certain colors to music genres as well as emotional response. The presentation will include images of designed spaces and music that have been combined for this research. The Whiteford 2018 study, paired color with music and created color palettes based on listeners' affiliations of certain genres of music with certain colors. This study's authors created music from textile weaving code and put it in the context of 6 genres of music from the Whiteford study - Country, Dubstep, Hip Hop, Indie, Mozart (Classical), and Progressive House. Images of designed spaces that closely matched the color palettes were then selected and study participants' emotional reactions to those images were measured. During this presentation, images of the study's interior spaces will be shown along with their corresponding musical scores. Audience members will experience the emotional connection between color, music, and the built environment through this immersive experience. The harmonious pairings will be contrasted against mismatched pairings, illuminating the power of the convergence of these disciplines to impact the user experience.

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Appendix for: Fabric Bridges: Experiencing space at the intersection of color and sound



Figure 1. Example of a fabric sample use in this project. Notice the amount of information needed to create this swatch; amount of texture, pattern creation and placement, overall and detail dimensions, etc.



Figure 2. Example of digital loom card for the fabric sample shown in figure 1. *This digital loom card contains the codes which answer the questions identified in the caption to figure 1.* 



Figure 3. Translation from original textile sample to colorways generated from music genres. These colors were generated from the color palettes identified in the Whiteford, et. al (2018) study (see figure 4 for additional images) *This process of identification and matching was completed for all fabric and music used in this study.* 



Figure 4. Samples of Color Palettes from Whiteford, et. al (2018).



Figure 5. Excerpt of musical notation derived from the code embedded in the loom card. Music representing the identified color palette was overlaid with this notation to create a unique score. *A unique score was created for each combination of loom card and color palette*.



Figure 6a. Dubstep space. Please view the 1<sup>st</sup> half of the video associated with the following link. This is one example of a designed space paired with created textile music.

# https://youtu.be/N5F3udnp-II



Figure 6b. County space. Please view the 2nd half of the video associated with the following link. This is another example of a designed space paired with created textile music.

https://youtu.be/N5F3udnp-II

The following are two more examples of the imagery associated with this project. In all, 6 spaces were developed with individual musical scores. All 6 will be played / reviewed during the presentation.





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Creative Scholarship | Design as Idea | Presentation

# Winterthur Scrapbook Houses

Annie Coggan, Pratt Institute

### ABSTRACT

Most scholars contend that the making of scrapbook houses in the late nineteenth century by young girls was a form of preparing them for their future domestic duties. But examining the language of "how to" articles, Victorian girls and their mothers read, leads one to read them differently. They declare the young girl "an architect" and call the house an "edifice" created with her own hands. This language is intriguing considering that Julia Morgan was the first woman licensed architect in the United States in 1904, and the first professional interior design work was initiated by Elsie De Wolf in 1905. So these young women were making these spaces or "edifices" at the very genesis of women taking part in the professions of architecture and design. Therefore, these collages could be read as acts of empowerment, not just preparation for marriage. In the archive Winterthur House and Gardens a collection of collage albums (also known as "scrapbook houses") reside in the Joseph Downs Collection. The collection of scrapbook houses is comprised of approximately 12 albums made by young girls between the years 1870 and 1910. The scholarly work done to date on these albums has positioned them within the American tradition of maintaining scrapbooks throughout the nineteenth century. The goal of the fellowship was to examine the collage albums, an analysis of the spatial conditions of the interiors rendered in the collage albums, and some initial sketches, diagrams, and textile sampling. This was all to culminate in a series of didactic objects. These "how to" articles were in The Good Housekeeping Discovery Book No.1, published in 1905; The Child's Rainy Day Book, published in 1905; and Godey's Lady's Book and Magazine, published in August 1880. All of the magazines were standard fare in a Victorian household and held enormous sway in how children played in the domestic setting. This research into the scrapbook houses garnered a series of projects. Like the surprise rhetoric of the "how to" instructions, these projects use and analyze typical decorative space, attempting to subvert stereotypical decorative objects yet

maintain the Victorian girl or woman's agency over the spaces she creates and inhabits. The first project was a series of imagined Victorian chair drawings that mimicked the scrapbooks. This series was based on the scrapbook interiors and aligned with a reading of the interiors described in Edith Wharton's House of Mirth (a novel that historically mirrors the time period of the scrapbook houses' creation). This reading, in collaboration with the literary magazine A Public Space, garnered a series of pillows that celebrated the Victorian childhood of Lily Bart. Finally, a chair embroidered with the scrapbook house drawings was produced in homage to the young Victorian girls who made extraordinary interiors in the Winterthur scrapbooks.

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Images for Winterthur scrapbook house project.



1-Example of Winterthur scrapbook house page Fol144



2-Example of Winterthur scrapbook house page DOC 1478



3-Example of Winterthur scrapbook house page DOC 1425



Ac کیسی 15-2018 4-Preliminary sketch of chair project derived from Winterthur scrapbook houses



5- Preliminary sketch of chair project derived from Winterthur scrapbook houses



6- Preliminary sketch of chair project derived from Winterthur scrapbook houses



7- If Lily Bart made a scrapbook house pillows. Made in collaboration with A Public Space.



8-Embroidered chair derived from Winterthur scrapbook houses.



9- Embroidered chair derived from Winterthur scrapbook houses.



10- Embroidered chair derived from Winterthur scrapbook houses-detail.

Creative Scholarship | Design as Idea | Presentation

# Interior Archipelago & Postcards from Our Islands: A Collaboration of Postcards Representing Interiors During COVID-19

Lois Weinthal, Ryerson University Wen Liang, Academy of Arts & Design, Tsinghua University Alica Huang, Ryerson University

### ABSTRACT

The interior has never been given such attention as it has during waves of lock-downs in the Covid-19 pandemic. Near-sighted views of the interior have been magnified over several months, drawing into focus emerging issues previously blurred. New genres of interiors have formed within our traditional interiors, both physical and virtual, and the pandemic made us look inside like we never have before. Boundaries between interior, exterior and virtual were blended and continue to influence our experience of thresholds. At the global scale, political borders have abstract boundary lines, yet on the ground, walls and poche of living spaces act as immediate buffers between individuals and neighbours. Even closer, face-masks intimately screen-off those friends and families not in one's immediate bubble drawing into question where interior ends and exterior begins. During these periods of lockdown, familiar rooms were rearranged to toggle between work and life, or take on new quarantine quarters before being fully integrated into the interior. Interior Archipelago-Postcards from Our Islands is an international design project that captures the familiar, but transformed interior during this time. Daily routines have been interrupted and with that, our ability to travel at will as we primarily journey from room to room. Postcards recall travel while acting as souvenirs and objects of desire (Stewart, 1993). This presentation frames souvenirs as images from lock-downs in the form of postcard sized works. Postcards allow a simple object to carry significant meaning and representation expressing time and location (Meikle, 2000). Students, faculty and staff from the three interior design programs located in Canada, China, and Scotland (with a program in Singapore) were invited to submit

postcard sized works that capture every day, quotidian interiors. In some cases, these may be quiet moments in a kitchen with early morning sun, or laundry hanging on a balcony to dry. Individual postcard images reveal cultures and locations as seen through imagery, language, and locations. With limitations on travel, these postcard images allowed our three international communities to build relationships and gain a multicultural understanding of one's interior. A website became the repository for these postcard images where contributors could upload their images. Contributors were asked to submit up to five images, include their affiliated school location, name, and brief description if they desired. The time frame of four months for submitting images resulted in over 300 contributions spanning the three programs in Canada, China and Scotland. Students in China could capture a moment of an interior from another student in Scotland, while a student in Canada could view an interior moment from a student in China. The website is a digital photo album allowing our three design communities to share images from travels within the domestic realm and immediate surroundings. An exhibition of these images took place at the university in China in early 2021 as students, faculty and staff were able to occupy their campus. The next exhibition is designed for the Canadian university following a similar palette of materials and presentation from China, but altered to fit the context of the university in Canada. The proposed exhibition continues this project as a design idea until it is safe to construct the exhibition and have students, faculty and staff return to engage the physical collection of postcards. The exhibition is located along a wall in the Interior Design program's building with a display of postcard images from the website collection. An area of the exhibition design includes a shelf with printed postcards for students to write to one another and a designed mailbox for collection. These postcards will be mailed back to the respective programs to build new relationships that provide global perspectives.

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## Interior Archipelago – Postcards from Our Islands

The following images provide supporting context for *Interior Archipelago – Postcards from Our Islands*. The design project launched as a website for contributors from three international interior design programs (one which has two locations) to collect images representing multi-cultural interiors during Covid-19 lockdowns.

The following images show the website landing page, map with contributing programs, and a sampling of postcard images from contributors. Postcard images were uploaded as they were received chronologically rather than organized by region and program.



Figure 1: *Interior Archipelago* website homepage.

Figure 2: Website contact page with map of programs contributing to the project.

Students, faculty and staff from participating programs were invited to submit images during Covid-19 lockdowns. The images in figures 3-5 on the following pages show a selection of postcard images from the website collection. Submission guidelines included the following:

- Format: A6 postcard 148x105mm, 300 dpi, in portrait or landscape
- Quantity: 1–5 (maximum)
- Submission content can be virtual, physical, sequential, encounters, meeting places, rooms, body

Contributors were invited to include a title and brief description to accompany the images. These descriptions provided moments of reflection on the contributor's gaze or thoughts at the moment. At times, these descriptions moved into narratives, revealing the multi-cultural and global views looking inward and outward of interiors during Covid-19.



Figure 3: Postcard submission images from contributing programs.



Figure 4: Postcard submission images from contributing programs.







Canadian university.





Figures 8: Location of exhibition in the Canadian university as shown through a longitudinal section. Installation Installation is currently on hold until Covid-19 protocols allow for an in-person exhibition.



Figure 9: Enlarged elevation showing information wall, exhibition wall, writing desk and mail slot for sending postcards.



Figures 10: Detail view of postcard installation referencing similar materials, such as cork, used at the installation at the university in China.

# Capacity of Convergence: The Potential of Merging Carved Stone and Quilted Fabric Systems

Felicia Francine Dean, Univesity of Tennessee Knoxville

## ABSTRACT

The contextualized perception of materials can fluctuate based on social, historical, environmental, spatial, and physical experiences. These conditions and the vernacular of a site may influence how materials are perceived. People understand their surroundings, the world, and themselves through their social interactions with an object in space (Risatti, 2007). A relationship exists between environmental surroundings and identity, which people connect to experiences with handcrafted objects (Risatti, 2007). Capacity to Converge challenges the standardized and limited perception of materials by investigating the misconceptions around material identity. The investigation seeks to heighten the material engagement and expand materiality through the lens of the design and making processes. The proposed approach focuses on stone and fabric material identities and the interfacing of their carving and quilting reliefs through hand, machine, and digital fabrication methods. The variety of fabrication processes may inform new ways of thinking and how materials visually merge. New forms of abstraction emerge through a digital approach that complements prior methods of making (McCullough, 2018). The machine-made strengthens the understanding of the handmade because the potential of both varies (Risatti, 2007). Additional points Risatti notes are limits of production and form with the handmade; however, the relationship of the handmade object to human scale inherently exists due to the maker's connection to the item during its development. As a result, the handmade may carry a close link to the touch and response of the human interaction. New ways of knowing and experiencing materials reveal further capacities and identity during the design and making process. Morris describes the example of Jackson Pollock acknowledging the process and material attributes of paint and the variables within the process that Pollock tested,

such as the impact of gravity on the application of paint. Participating in the physical process allows for the recognition of the media to move past the traditional approach and uncover the latent identities. The Capacity to Converge carving and quilting processes and their material identities afford the discovery of dormant material identities. Classical figurative stone sculptures depict the folding and draping of fabric. In figures 3 and 4, the author tested digital and hand processes which transfer fabric smocking forms into the surface design of an object. However, in that instance, the stone was a single material. The carving and quilting exploration of this approach pursues a process that applies quilted characteristics to stone carving while blurring the boundary of the visual connection of where the quilted upholstery system and stone system of a furniture stool converge (Figures 5- 7).

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Figure 1: Stone quarry in Gramolazzo, Italy, Garfagnana region



Figure 2: Mead's quarry in Knoxville, Tennessee, East Tennessee region



Figure 3: Fabric surface relief of a smocking sewing technique on stone with a matte finish and machining tooling paths



Figure 4: Fabric surface relief of a smocking sewing technique on stone with a smooth polished finish and machining tooling paths



Figure 5: Freeform quilting test on muslin fabric



Figure 6: Freeform quilting test on muslin fabric demonstrating puckering of fabric



Figure 7: Furniture stool rendering illustrating one approach to abstracting stone's rigid material identity with a quilted system's attributes

# From Site to Interior: Identity and Collectivity in the Multi-Family Housing

Charles Sharpless, University of Arkansas Jessica Colangelo, University of Arkansas

### ABSTRACT

The Emory Park Houses are a 27-unit shared access development in West Dallas on a two-acre tract within a few miles of the city's downtown core. The project seeks to achieve a contextually sensitive solution to the increased density necessary to meet the rising demand for housing in American cities by focusing its attention on generous interior and exterior spaces, restrained detailing and the strategic siting of each individual house. The recently published report, "Housing is Critical Infrastructure: Social and Economic Benefits of Building More Housing" estimates that the United States needs to produce 5.5 million more units of housing to meet the current shortage of available housing that is contributing to a crisis of affordability and social inequity in the US Housing Market.(1) According to the authors, housing is required in all sectors from multi-family to single family and all regions of the country. The city of Dallas is no different. While past development focused on the flat expanse of cheap suburban land in the distant periphery of the city, current trends to add housing units closer to the urban core have begun to take root. However, as lamented by Dallas architecture critic Mark Lamster, the current design trends-cheekily referred to as "Uptown Specials"-in these density-seeking projects lack a sensitivity to context, scale, pedestrian usability and construction quality.(2) Emory Park Houses seek to mediate these two positions, positing that design and density in housing developments are not mutually exclusive categories. The project site is organized into four rows of houses running east to west. To address the pedestrian scale of the neighborhood, houses at the perimeter of the development are oriented with entries and porches facing the street and sidewalks. Furthermore, each house height is kept to two stories, and the lot coverage is well below the 60% stipulated by zoning codes to achieve a porosity across the site. In return,

residents of the community have direct access to private yards. These open spaces are clustered together within each housing row in a skip-stop pattern creating an alternating rhythm between open yards that face one another and building masses back-to-back. The adjacent yard spaces are then woven throughout the community to break up the streetscape and allow light and air to flow through the neighborhood. While each house features a similar arrangement of interior rooms, variety is found in the entry thresholds and the arrangement of window openings in the living spaces. Lifted above the street level on the second floor, the main living space of each house features an open plan and cathedral ceiling taking full advantage of the interior space of the gable roof. There are five different configurations of large eight-foot wide window openings on the gabled interior elevation that differentiate individual houses from inside and out. An open kitchen flanks one side of the space, with a generous island allowing for a social central feature of the living area. The ceiling is wrapped in a natural wood shiplap paneling that envelope the space in warm tones and creates a visual continuity across the living area. The house's exterior design reinterprets familiar residential details such as gabled roofs, clapboard siding and window awnings in ways that combine the utilitarian beauty often admired in vernacular structures with an elegant restraint found in modern architecture. The exterior of each house is clad with three widths of off-the-shelf horizontal cement board lap siding, creating a visual gradient of material widths moving up the façade and providing texture and scale to the facade through their varying densities of shadow lines. Porches and overhangs at the ground level are clad in natural wood siding to give warmth to the outdoor living spaces. And metal window boxes and roof eaves shade the large openings and animate the exterior with changing shadows throughout the day.

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### **EMORY PARK HOUSES**

The Emory Park Houses are a 27-unit shared access development in West Dallas on a two-acre tract within a few miles of the city's downtown core. The project seeks to achieve a contextually sensitive solution to the increased density necessary to meet the rising demand for housing in American cities by focusing its attention on generous interior and exterior spaces, restrained detailing and the strategic siting of each individual house.



### SITE STRATEGY

The project site is organized into four rows of houses running east to west. To address the pedestrian scale of the neighborhood, houses at the perimeter of the development are oriented with entries and porches facing the street and sidewalks. Furthermore, each house height is kept to two stories, and the lot coverage is well below the 60% stipulated by zoning codes to achieve a porosity across the site. Site Plan


### SITE MASSING

Open spaces are clustered together within each housing row in a skip-stop pattern creating an alternating rhythm between open yards that face one another and building masses back-to-back. The adjacent yard spaces are then woven throughout the community to break up the streetscape and allow light and air to flow through the neighborhood. Physical Model of Site Massing





# VARIETY IN ELEVATION

Within the typical plan, five configurations of the large 8' wide openings in the front gabled elevation lend variety to the street elevations of the project and stag-ger the openings of adjacent dwelling units to create privacy. Lifted above the street level, the main living space of the dwelling units are daylit by these large windows windows.

Perspective View of Bayonne Street

**Elevation Types** 



### LIVING SPACE

Lifted above the street level on the second floor, the main living space of each house features an open plan and cathedral ceiling taking full advantage of the interior space of the gable roof. An open kitchen flanks one side of the space, with a generous island allowing for a social central feature of the living area. The ceiling is wrapped in a natural wood shiplap paneling that envelope the space in warm tones and creates a visual continuity across the living area.

Perspective View of Second Floor Living Space



Perspective View of Second Floor Living Space



# **OPEN SPACES**

The house's exterior design reinterprets familiar residential details such as gabled roofs, clapboard siding and window awnings in ways that combine the utilitarian beauty often admired in vernacular structures with an elegant restraint found in modern architecture. Porches and overhangs at the ground level are clad in natural wood siding to give warmth to the outdoor living spaces.

Perspective View of Private Yard and Patio



#### SECTIONAL DESIGN

The houses are organized around a naturally lit central staircase, which connects the entry foyer and second floor living space. The stair is wrapped in wood paneling to bring warmth to the center of the house, and act as a backdrop for the living room. The second floor living space takes advantage of the gable roof section with a high cathedral ceiling and large windows overlooking the trees and neighboring houses.



Section Perspective of Typical House





First Floor Plan

First Floor Plan



Second Floor Plan



#### PLAN VARIATION

The typical plan is adapted in response to individual site constraints resulting in 5 types of houses. The types are distinguishable by garage, porch and front entry locations and minor variations in overall dimensions.

Typical Plan with Porch and Stoop Entry



# **CONSTRUCTION PHOTOS**

Construction on the houses began in July 2021. As construction trades move down the rows of houses in sequence, the project can be viewed in all stages of construction simultaneously. The first houses in the neighborhood are scheduled for completion in December of 2021.



Construction Photographs

Creative Scholarship | Design as Interior | Presentation

# The Incredible Edible Impact of Workplace Brand

Terry Londy, Florida State University

# ABSTRACT

Introduction "The traditional view of design is that is has four possible goals: to identify, to inform, to entertain, or to persuade. But with branding there's a fifth: to differentiate. While the first four are tactical, the fifth is strategic." (Neumeier, 2006) A Brand sets itself apart from its competition through superior products and services, and the same can be said about the implementation and strategy behind the interior vision. A company's Brand has a visual set of standards (Appendix 1) which usually consist of a logo, typography, and a set of pantone colors. While meaningful, these elements are very flat, while a Brand is much more - it is a living thing, something one experiences and can believe in. "It's a gut feeling because we're all emotional, intuitive beings, despite our efforts to be rational" (Neumeier, 2006). Specifically in workplace design, the environmental graphics and Branding create a sense of place, reinforcing the Brand, and building a lasting connection with the user which helps to establish identity and build loyalty. Process As an urban designer Kevin Lynch explored architectural forms and their influence on visual perception at the city scale (Lynch, 1960). His principles are transferable to how interior space is engaged & navigated by a user. Based on Lynch's principles, the design process of building brand experiences in the interior starts with a critical mapping exercise where pathways, nodes, and landmarks are identified to locate key impactful Brand locations (Appendix 2). Skillfully applying this strategy results in a space where the Brand becomes tangible, experiential, making a unique lasting connection with the user. Project An established tech Brand evolved a new identity due to a competitor acquisition just west of Chicago. The desire to revitalize the company culture with a more diverse workforce by luring key talent from Chicago was a strong driver behind their new identity. The design team and client realized quickly that strong interior design would rely heavily on strategic placement of Brand installations along areas of travel, highlighting major nodes of interest and connecting key

functions. The design team established the following goals: • Create a sense of welcome • Reinforce the Brand Values, Mission, & Vision • Support the company culture initiative for inclusion • Bring a "wow" factor that captures elements of their business process Upon entry the user is welcomed by a custom light fixture inspired by the Brand logo (Appendix 3). The logo was designed to simulate movement, a reflection of the company's agility (Addison, 2020). Influenced by the mobility of the design, the logo was dissected into repeating forms and arranged at offset planes so that the logo is only recognizable from a specific point of view. The environmental graphic experience was redesigned throughout the interior. The Brand graphics articulating the company vision were reimagined by juxtaposing scales and using materials integral to the company's manufacturing process resulting in a bold and fresh user experience (Appendix 4). The Brand story was enhanced by leveraging nodes and landmarks along primary interior paths (Lynch, 1968). Kinetic programmable RGB lighting along the primary circulation artery promoted movement and delight (Appendix 5) and allowed team members to celebrate events including Pride Month. In the spirit of celebrating the company's products, a multi-level sculpture resembling highly polished circuit boards anchors the monumental stairway (Appendix 6). The interior and Brand evolved concurrently to become a tangible experience that promotes a lasting connection for all users. Through a design strategy that emphasized discovery, the evolution of the interior reflects the approachable but dynamic personality of the client.

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# Averta Light ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789,./?!# Averta Regular ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789,./?!#

Averta Bold ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789,./?!#

Averta Extra Bold ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz 0123456789,./?!#

#### ABOUT US **Precision without**

compromise.

We are a lorem ipsum Velent assime porrovit latur a ipiet et hitiaspedit pos res ipsamendus is estis dolupta tentusandi occaborpor aut eum, pa quaturibus apit lautatia poraturi nulpari taquis doluptur apelici ante untureptas aut eosam qui idusanda.

**Appendix 1 - Brand Standards & Visual Identity** LogoMark, Usage, Brand Color & Typography



**Appendix 2 - Floor Plan with Experience Diagram Sketch** 



Appendix 3 - Logo Light Fixture LogoMark visualized as a dynamic lighting element



Appendix 4 - Before and After Re-imagined Company Statement Mission, Vision, & Values experienced at a "Bold" scale



Appendix 5 - Logo Light Fixture on Glass, RGB Lighting RGB programmable kinetic lighting in Brand colors



Appendix 6 - Hanging Sculpture of Dichroic Glass & Aluminum Inspired by a circuit board, reflecting glass and highly polished connections

Creative Scholarship | Design as Interior | Presentation

# Wildcat Hollow

# Kimberly Fulong, University of Arkansas

### ABSTRACT

Design is approaching a crucial period where the exchange between interior and exterior systems needs to be rethought and addressed from the standpoint of resilience and innovative environmental responses. The era of the detached interior bubble that is climate controlled and therein severed from natural systems is no longer justified or feasible. Interior spaces must respond to environmental conditions and proactively engage natural systems. Furthermore, spatial needs and occupancies are evolving rapidly from the exclusive programmatic specification to hybrid occupancies and mixed-use. As such, how we think about and that by which we conceive interior spatial strategies must become more responsive and thus compatible with these ever-changing parameters. Within the incipient realities of our modern-day augmented environment, a third-year Interior Architecture studio set out to define an innovative design approach that caters to the integration between the interior and external settings. To encourage students to develop novel interior schemes, the studio started with a conceptual exercise that explored topographic variances in nature. Nature offers us a magnificent array of heterogeneous landscapes and various ecologies. The biodiversity of these environments reveals a vast platform for research into natural artifacts. Students used these studies to develop interior topographic strategies that were the foundation for rich sectional ideas. These studies became the starting point for the main project in which students were charged with the design of an Amazon Prime Air fulfillment center to be located in an existing urban storage building. The building is in an active industrial district of the city. The Prime Air facility employs drones to deliver packages and incorporates a complex automated infrastructure to transfer goods. Hence, the complexity of the design problem was positioned in creating inhabitable spaces for a hybrid species of sorts, the human and the machined, while establishing an integral interior topography that links the programmatic spaces to the city's context. This prompt allows the external site properties to

shape interior strategies and vice versa. Interior space has often been understood and advanced in alignment with human occupancy, prioritizing parameters for external separation and comfort. In that sense, interiority has usually maintained a closed, discrete internal systems. This isolation is challenged through the program of the project and the process of the design. Here, interiority must respond to the changing demands of our environments. It must actively partake in a future narrative where ecologies of place, space, buildings, human, and non-human entities, become intrinsically interwoven and indispensable to our advancement. To devise interventions proliferating a robust interior agenda in urban contexts, students generated extensive site surveys from human and drone stances. The site surveys, coupled with the conceptual studies supported by robust computational platforms and prototyping, allowed for innovative interventions within the existing building and site. The projects engaged interiority as both concept and condition. They effectively presented schemes contingent on immediate and distant milieus. The resultant interior architecture concepts initiated and reinforced an exterior/ interior overlap. It postulated innovative spatial applications of the systematic functions and design sensibilities afforded by models in nature, proving these methods beneficial to increasing the efficiency and aesthetics of interior spaces. We are entering an era where the multimodality of design is developing parallel to that of daily life. As designers and occupants of space, it is imperative that we challenge the prevalent autonomy of the interior volume, asserting through design the realities of our modernday augmented environments.

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# HOLLOWCAT WILD RESIDENCE

elevated ceiling plane, Texas Lueders limestone embracing walls, wide-plank white oak floor and wall boards at entry to master retreat



living pavilion with inner court



view through glass bridge to city beyond





PLAN



local Lueders limestone quarry

local German immigrant building tradition

Nasher Sculpture Center white oak floors, monolithic stone embracing walls

material, craft + spatial PRECEDENTS



Texas Lueders limestone portal from living pavilion to master retreat natural white oak stairs and butted wall boards





KITCHEN in living pavilion





# PRIVATE GUEST RETREAT + LAWN with living pavilion beyond



MASTER RETREAT removed from living pavilion and shrouded in trees

SCREENED PORCH BALCONY off master bedroom, cantilevered into trees, simple neutral palette













# Scholarship of Design Research | Diversity/Equity/Inclusion | Presentation

# AFRICAN AMERICAN COMMUNITIES IN THE RURAL SOUTH AND THE BUILT ENVIRONMENT

Johnnifer Brown, Western Carolina University

### ABSTRACT

The purpose of this study is to identify the characteristics of the built environment that support the home, family, civic, and community structure of African Americans living in the rural south. For this research, the built environment consists of the buildings and other structures designed by the community members. This study seeks to identify elements, principles, and design concepts of effective community design, to cultivate and encourage African Americans return to the rural south to live. Using photo analysis and ethnographic observation, the history and background of a landscape, and the social and economic dynamics point to relevant design concepts and solutions. These research methods provide an emotional connection to a community and captivate the hearts of the residents. Big Zion, Alabama was selected for the study, based on the researcher's personal interest and the demographics of the area. Through photo analysis, this study examines pictures of currently used structures that remain in communities of the rural south and use interviews to discover how people live in those communities today. The following research questions and findings guide this study to identify key factors needed to build a community for African American families that supports their home, family and civic life. The literature review attempts to answer the first two questions, whereas the last two are discovered through the research process. 1. What motivated African Americans to leave the rural south during the Great Black Migration? 2. Why would an African American family want to reversemigrate towards a rural community. 3. How can a built environment be designed for an African American community in the rural south? What are the key factors needed to design such a community? 4. What building structures and design elements support an African American community and multi-generational families in the rural South? Ethnographic observation reveals that the Big Zion School played a major role in the built environment for this community between the years 1905 to 1965. In addition, the Big Zion church was the start of this community as a brush harbor structure and is the last remaining building on the site. The community pool was a functional resource as well as recreation in the landscape of Big Zion. The pool is no longer operational. There were other key structures of the community, such as the corner store, baseball field and farmland that community members had access to during their childhood, that do not exist today. The shot gun style home and garden were also key to the community environment in Big Zion. This research reviews pivotal movements in the history of the African American southern communities. Results from the photo analysis, ethnographic observations, and interviews with participants residing in Big Zion led to identification of key factors for the built environment. The Big Zion School, the Big Zion Church, and the open landscape of the property became these unifying factors and drove the civic and community life for these African American families. Since slavery, segregation, civil rights, migration, and now more modern terms such as redlining, gentrification, racial profiling, and black lives matter; African American families continuing to struggle to find economic and social equality, physical and mental stability, and overall safety. A new built environment begins with an established black community that can instill the importance of education, provide safety, home stability and allows families to reverse migrate to the rural south.

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#### PHOTO ANALYSIS OF THE BUILT ENVIRONMENT

The following photo analysis taken by the author, describes the built environment that exists in the rural south. The shotgun house and schoolhouse give a historical representation of the building structures in Big Zion, Fleta, and the Pintlala rural areas of Alabama. The aerial view of the Big Zion community gives a clear picture of the landscape for this community.



Figure 1. The Big Zion Community, Alabama

Source: by Google Maps. 2016



Figure 2. Shotgun House Exterior, Montgomery, Alabama

Source: by Author. Old Alabama Town Museum

This shotgun house was built in the 1880s in the city of Montgomery, Alabama. Its style originated from Africa and was replicated by slaves in the United States. After the Civil War, many African Americans came into the city to find employment. This small linear structure provided an economical solution for most African American families.



The Big Zion School – A Rosenwald Experiment



*Figure 3*. Rosenwald Model School

Retrieved from https://durhamcountylibrary.org/exhibits/jeanes/schools/plans.php

There was a need for education among African American adults and children. Many of them learned how to read and write in churches, lodge halls, and other private buildings. Since there was a lack of support from the public schools' systems, local black educators donated handmade desks, and teaching materials. Moses Primus became one of those educators in the Big Zion community and created the Big Zion School.

This original structure was a small wood frame building about 20 feet wide and 30 feet long with a minimal heating system and no windows. Primus recalled men, women, and children that were anxious to learn how to read and write. On the first day of school, slightly less than 100 of them arrived at the front door and Primus saw the need for the school to grow. Primus reached out to his mentor Booker T. Washington to assist the community (Primus, 1946).



Figure 4. Julius Rosenwald and Booker T. Washington, 1914

Retrieved from <u>https://s3.amazonaws.com/wp-ag/wp-</u> content/uploads/sites/71/2015/09/RosenwaldBookerT-392x600.png



Figure 5. Rosenwald supporting black education

Retrieved from http://www.preservationnation.org/rosenwald/history.html

In 1913, Booker T. Washington, the president of Tuskegee University and Julius Rosenwald, a board of trustee member for Tuskegee University, and president of Sears, Roebuck and Company, joined together to building a Negro school in Montgomery County. Mr. Rosenwald presented Washington with a Rosenwald Fund, in the amount of \$300. Rosenwald's plan was to build six experimental schools throughout the rural south using corporate funds and local donations from each community. Mr. Rosenwald believed that hard work, sacrifice, and using local materials would strengthen African Americans to commit to their communities (Preservationnation.org, 2016).

The community of Big Zion was one of the six schools chosen for this project. The residents within the community of Big Zion donated \$500 towards the building efforts. In the fall of 1913, a newer two room school was constructed in place of the original structure. In 1914, one year before Booker T. Washington's death, Mr. Washington made a trip to see the finished school. Mr. Rosenwald made a visit to Big Zion the following year in 1915 (Preservationnation.org, 2016). In 1924, a third room was added to the school to separate the classes. Each room consisted of one teacher that focused on two grades. The school taught first through sixth grade (Primus, 1946).

# Scholarship of Design Research | Diversity/Equity/Inclusion | Presentation

# An Educational Intervention to Increase Intercultural Competency in Interior Design Students

Taneshia Albert, Auburn University Courtney Brown, Auburn University Mayuko Nakamura, Illinois State University Lindsay Tan, Auburn University

# ABSTRACT

The noticeable shift in interior design practice towards understanding issues of emotional and cultural intelligence offers opportunities for educational programs to provide direct impact by increasing the levels of emotional and cultural intelligence of emerging interior design practitioners (interior design students). The use of intercultural competence (ICC) as part of critical professional training in many fields aligns to the aforementioned idea, as ICC seeks to understand how professionals functionalize their understandings of cultural differences into policies and solutions that are appropriate for their professional setting. It is necessary to understand if and how course-level curriculum interventions may impact the ICC levels of emerging interior design practitioners. The hypothesis is that it is possible to change students' ICC through strategic academic intervention. Based on this hypothesis, this presentation reports on the results of an academic intervention intended to increase interior design students' intercultural competency. The intervention engaged students enrolled in an undergraduate, theory-based lecture course in learning experiences related to community spaces, social justice, global issues of design, and sustainability, with the intent to improve ICC levels. The research design utilized the proprietary Intercultural Development Inventory (IDI) survey as a pre- and post-test instrument to measure ICC levels before and after the intervention. Results indicated no significant change in the collective cohort's ICC levels, but a chi-square analysis of data revealed a significant change at the individual level. Specifically, data indicate that the interventions 1) gave students a deeper understanding and insight of their culture and cultural norms; and 2)

allowed for significant positive movement along the IDI continuum. The results indicate a positive relationship between course-level curriculum interventions and ICC levels, which supports the hypothesis that is possible to change students' ICC through strategic academic intervention.

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# Course Modules & Content

|                             | The Human Body and the Environment |  |   |
|-----------------------------|------------------------------------|--|---|
|                             | 1 <sup>st</sup> Quarter            | Topics Covered:<br>• Ergonomics<br>• Anthropometrics<br>Purpose:   | <ul> <li>Proxemics</li> <li>Home Environments</li> <li><i>Goal</i>:</li> </ul>  |
|                             |                                    | To familiarize students with theory, the connection of design outcomes to theory                                     | Student will begin to understand who they are in the context of<br>the design environment and as an emerging designer   |
| Not in scope<br>of research |                                    | Assessment:<br>Graphic exercises that visually connect topics lectured to areas students may be more familiar with   |   |
| intervention                | Personal & Public Space            |  |   |
|                             |                                    | Topics Covered:  |   |
|                             | 2 <sup>nd</sup> Quarter            | <ul><li>Public Space &amp; Cues</li><li>Secondary Spaces &amp; Cues</li></ul>  | <ul><li>Territoriality</li><li>Lighting as Space Cues</li></ul>   |
|                             |                                    | <i>Purpose:</i><br>Have students practice applying theory to design<br>solutions through backwards design strategies | <i>Goal</i> :<br>Student will begin to understand how people may read their and<br>become influenced by their environment.  |
|                             |                                    | Assessment:<br>Diagram assignments that allow students to dissect design   | and articulate theory   |
|                             | Community Spaces                   |  |   |
|                             | 3 <sup>rd</sup> Quarter            | <ul><li>Topics Covered:</li><li>Design for Inclusion</li><li>Social Justice &amp; Interior Design</li></ul>          | Urban Design & Interior Design  |
|                             |                                    | <i>Purpose:</i><br>To introduce students to the evidence-based design<br>process                                     | <i>Goal:</i><br>Students will be able to critically evaluate bodies of<br>informational sources (textbook, research, articles, etc.) in<br>academic and popular outlets to understand the social justice<br>needs of various populations. |
| Within<br>scope of |                         | Assessment:<br>A series of research papers that introduces and reinforces evidence-based design  |   |  |  |  |
|--------------------|-------------------------|--|---|--|--|--|
| research           |                         |  |   |  |  |  |
| intervention       |                         | Designing for the Planet   |   |  |  |  |
|                    | 4 <sup>th</sup> Quarter | Topics Covered:<br>• Sustainability<br>• Globalized Design   | Designing in a Cultural Context   |  |  |  |
|                    |                         | <ul><li><i>Purpose</i>:<br/>To have students apply the evidence-based design<br/>process to design outcomes</li><li><i>Assessment:</i><br/>A series of design projects informed by evidence-based of</li></ul> | <i>Goal:</i><br>Students will become excited about how design can shape<br>communities and how design touches the lives as a vessel for<br>societal change.<br>lesign approaches and activities |  |  |  |

Additional Questions added to IDI by Researchers

| Bennett's (2009) ICC Development<br>Course Focus   | Albert & Hong, (2017)<br>Pedagogical Course Goals   | Theme<br>Connection | Pre- Post-<br>Test | IDI Research Added Questions   |
|--|---|---------------------|--------------------|--|
| Mindset<br>includes knowledge of culture-general   | Create a foundation for<br>evidence-based design as a<br>design strategy and practice                               | Knowledge of        | Pre-test           | Have you lived in another country for extended time (e.g. more than 2 weeks)?  |
| maps or frameworks, of specific<br>cultures, of identity development<br>patterns, of cultural adaptation<br>processes, and of cultural self- | through the study of the human<br>relationships to design.  |                     |                    | How often do you have conversation with people<br>from different cultures or people of different race<br>or ethnicity?           |
| awareness  |   |                     |                    | Did you live in ethnically or culturally diverse neighborhoods as you grew up?   |
|  |   |                     |                    | How frequently do you attend events, watch videos, or read books that present viewpoints other than your own?                    |
|  |   |                     |                    | How many friends from cultural- racial- ethnic<br>backgrounds different than your own do you<br>have?                            |
|  |   |                     | Post-test          | The course assignments helped me to know more<br>about other cultures or people from different<br>backgrounds.                   |
|  |   |                     |                    | The in-class lecture and activities helped me know<br>more about other cultures or people from different<br>backgrounds.         |
| Skillset includes the ability to empathize,  | Develop research-based<br>solutions as visual design<br>representations by requiring<br>students to use research to | Ability to          | Pre-test           | How many classes have you taken that teach you about people of different cultures or   |
| gather appropriate information, listen,<br>perceive accurately, adapt, build   |   |                     |                    | backgrounds?   |
| relationships, resolve problems, and<br>manage social interactions and<br>anxiety.   | develop practical design<br>solutions for a diverse or<br>unfamiliar clientele                                      |                     | Post-test          | The in-class lecture and activities helped me<br>develop my skills in working with people from<br>other cultures or backgrounds. |

|  |   |                               |           | The course assignments helped me develop my skills in working with people from other cultures or backgrounds.   |
|--|---|-------------------------------|-----------|---|
| Heartset<br>includes attitudes and motivation<br>includes first and foremost, curiosity,<br>as well as initiative,<br>nonjudgmentalness, risk taking,<br>cognitive flexibility, open-<br>mindedness, tolerance of ambiguity,<br>flexibility, and resourcefulness | Develop critical-thinking and<br>problem-solving skills through<br>introducing and furthering links<br>between developing a context for<br>design issues. | Attitude of/<br>Motivation to | Post-test | As a result of this course, I'm motivated to<br>consider aspects of diversity as I work with<br>people from different cultures or backgrounds.<br>As a result of this course, I'm motivated to learn<br>more about other culture or people from different<br>backgrounds. |



Frequencies of participants' Perceived Orientation and Developmental Orientation scores (N=17)



*Frequencies of participants' subscale scores (N=17)* 

## Bridging the Digital Divide in Interior Design through an Immersive Maker Program for Underrepresented Students

Abimbola Asojo, University of Minnesota Michael Lekan-Kehinde, University of Minnesota Hoa Vo, Georgia State University

## ABSTRACT

Maker spaces engage students in learning through empowering them to explore ideas and problem-solving in hands-on environment using digital and/or physical modalities. Such designbased programs can increase learning since they foster student autonomy and support a framework that promotes problem-solving and sensemaking (Talafian et al., 2019). Our interdisciplinary team of researchers at this Midwest University in conjunction with community partners offered a program targeted at underrepresented and minority students in a school zone with an exceptionally high educational achievement gap, one of the worst in the nation. Our state ranks 48th and 50th in the high school graduation rates for African American and Hispanic students, respectively. The primary goal of our work focused on interior design and math learning and using making to bridge the digital divide to create opportunities for underrepresented students specifically in interior design. Exposing students to making is of great interest among educational institutions across the United States due to its promising outcomes (Lindsey and M. Daniel, 2017). The Maker Movement is "traditionally viewed as grounded in gendered, white, middle-class cultural practices" (Vossoughi, Hooper & Escudé, 2016). Researchers have argued for making to be more inclusive. Marsh et al. (2017) in Makerspaces in the Early Years: A Literature Review discuss the importance of inclusion because of limited literature on underrepresented groups and maker spaces. Eglash, 2007 describes the synergetic connection in this making process as "design agency", a notion that not only does the maker influence the design but the design influences the maker. Barton and Tan (2018) note that makerspaces that explore communities and cultural traditions are an exception and discuss

community-centered making programs as a way to foster equity, learning and making. They argue for a "more culturally-responsive approach", where the making experience benefits both cultures and does not privilege the dominant perspective. Building on this literature, we used an inclusive lens to deliver programs for underrepresented K-12 students in summer 2020 and 2021. The project-based making exercises focused on the intersection of interior design and math drawing on historic design precedents from ethnic minority communities, including African, African American, Hmong, and Vietnamese communities, where underrepresented student participants in this program came from. Using design precedents from diverse communities helped our team create a "culturally-responsive approach" that is inclusive and relevant to student participants. We exposed K-12 students to interior design, engaged students in hands-on experiences, created opportunities for students to collaborate with underrepresented mentors and we used design precedents from underrepresented designers to illustrate contributions to the built environment. Our presentation will highlight how a culturally responsive pedagogy is developed and implemented for underrepresented K-12 students to learn about interior design. We will share some of our short term outcomes to providing equal access to immersive curricula to underrepresented students and how we bridged learning losses due to the impact of the COVID-19 pandemic. Long term outcomes are increased diversity in interior design, and development of a scalable model that can be replicated in other communities.

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| What ye        | ou can o                 | to while          | in scho                         | ol:               |              |  |            |        |  |
|----------------|--------------------------|-------------------|---------------------------------|-------------------|--------------|--|------------|--------|--|
| Math           | Art                      | Science           | History                         | Social<br>Studies | Perkins&Will |  |            |        |  |
| What y         | ou can                   | do now:           |                                 |                   |              |  |            | _      |  |
| Sketch<br>Draw | Look at<br>your<br>parks | Tour<br>Buildings | Manura<br>Berg<br>Registeration | Ask<br>Questions  |              |  |            | -      |  |
| Evou           | decide t                 |                   | Interior                        | designer          | ov svebitori |  |            |        |  |
| or land        | lscape a                 | rchitect          | :                               | uesigner          | or architect |  |            |        |  |
| College        | Get a                    | Work at           |                                 |                   |              |  |            |        |  |
|                | degree                   | a firm            |                                 |                   |              |  | Activate W | indows |  |



K-12 Students learning about Interior Design through a virtual office tour



intertails in desi



K-12 Students learning through making



Post-Camp responses about design careers they learned about



## Virtual Camp Satisfaction, 5 - point scale

- ... campers with K-6 (18) and 7-12 (12) students.
- The majority of campers (72.72%) considered the camp as informative and interesting (36.36% gave 5 points and 36.36% gave 4 points).
- None of the campers rated the camp as not informative/interesting.

## Classroom design for students with severe autism using a longitudinal post occupancy evaluation method

Julie Irish, Iowa State University

## ABSTRACT

Introduction Post occupancy evaluations (POEs) are a research tool used in design and facilities management fields to test user satisfaction or building performance on a new or refurbished property. Most POEs are conducted a few months to a year after completion: longitudinal studies are rare (Gifford, 2016). Benefits of POEs include gaining feedback on the original design to effect improvements in future projects (Nawawi & Khalil, 2008; Tookaloo & Smith, 2015). POEs have been used in educational environments to support teaching and learning including a school for autistic students (Mostafa, 2018). Students with autism can be sensitive to environmental factors or physical distractions which divert them from learning, so it is important to design supportive educational spaces. However, research into design of such spaces is lacking (Gaines et al., 2016). The purpose of this research was to conduct a POE of a school that included c.40 children aged 3-19 with severe autism 10 years after occupation to find out the suitability of the design. Characteristics of severe autism include additional learning disabilities, non-verbal communication, and challenging behaviors. The research variables of interest were room layouts, furniture, fittings, and equipment (FFE), materials, and environmental factors, e.g., lighting and acoustics. Method The methods were a) a building survey comparing as-built documentation with the current situation, and b) a survey of building users to find out how design features supported the learning and behavior of students with autism. The researcher was the interior designer on the original construction with personal knowledge and access to drawings, specifications, and photographs. A room-by-room survey was conducted including annotating plans for significant alterations and recording the condition of materials to assess their suitability for this population. To increase reliability, an online survey was distributed to all

educators and administrators at the school (N=120). The 52-item questionnaire was set up in Qualtrics including demographic, Likert-scale satisfaction questions, and write-in spaces allowing participants to explain their responses to increase specificity. 58 people (48%) participated in the study. Findings Key findings were that 75% of respondents agreed or strongly agreed that the classroom layout, which included zoned areas for teaching, eating, computer work, and sensory activities, met students' needs. One participant suggested using fixed screens to create hard zones, which was noted in two classrooms. Interactive whiteboards were rated positively by 95%. The main criticism was the lack of robustness of furniture. The building survey confirmed several broken computer desks and sofas with significant wear and tear. Each classroom had an intervention room attached to it (to de-escalate behaviors) and 76% of participants agreed or strongly agreed that these supported student behaviors. Pairs of classrooms shared a suite of restrooms which were rated satisfactory or very satisfactory by 81%. However, one respondent reported that showers were not used which was corroborated by the survey noting them used for storage. These could be omitted in future designs. Nearly 88% of respondents were satisfied/very satisfied with direct access from the classroom to the outdoor play area. Regarding materials, the building survey revealed that floor finishes (linoleum), remained in good condition with an 81% satisfaction rating by respondents. However, padding to walls and floors in intervention rooms showed signs of wear and tear. The findings suggest that students with severe autism benefit from zoned classroom layouts with direct access to an intervention room, restroom facilities, and outdoor area. Linoleum is a suitable hard-wearing floor finish. Loose furniture needs to be carefully selected for robustness. This study adds empirical knowledge about classroom design for students with severe autism.

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## **Eurocentrism in Interior Design's History**

Solmaz Kive, University of Oregon

#### ABSTRACT

The survey of Interior design/architecture is one of the main sources for students to learn about the diversity of practices across the globe. Yet historically, this story is told through Eurocentric/western-centric narratives. Having adopted their method and structure from architectural history, contemporary surveys of interior design are typically arranged around a linear narrative of a Western core from the antiquities to the present. While the stage for the triumphal entrance of the Greek is set by chapter(s) on Egypt and Mesopotamia, other so-called "non-Western" styles like "Chinese" or "Islamic" appear as isolated interruptions to the main narrative. As some critics have pointed out, this structure not only marginalizes "non-Western" styles as unworthy of attention, but it also renders them homogeneous and changeless. For instance, Renaissance and Baroque styles are often aptly separated in distinct chapters, while the entire material culture of India is elided into one chapter, leaving little room to properly discuss diverse traditions and their changes throughout millennia. This structure inevitably sets the Western core as the point of reference for the "others." For instance, the interior design of the socalled "Islamic architecture" often discusses arabesque and geometrical patterns in terms of the prohibition of image in contradistinction from European figurative representation. Needless to say, many features are at work in creating and maintaining the Western-centric narrative of the survey. However, I argue, the structure of the survey textbook (and corresponding courses) alone plays a significant role. Given the current momentum for decolonizing the pedagogy of interior design, it is crucially important that we use all tools available to examine the residual traces of the colonial model in the contemporary practice. This presentation uses computational tools to explore questions of classification and order, spatial coverage, temporal span, and line(s) of narrative for each book as well as the changing structure of the books. As a few examples, mapping the main buildings covered in each book offers a clear spatial view of the book's focus and breadth. Tables of chapters' coverage show the distribution of different regions throughout

the book, which reflects issues like the grouping of certain regions together, the continuity of the line of narrative for different regions, the implications of modernity (for regions covered in the later chapters) or the line of narrative or bar charts reflect the temporal scope and scale of chapters to explore the stereotyping effect of the structure. Finally, using examples from my survey courses, I will discuss some potentials of the digital tools for restructuring the survey.

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## Micro-urban Commons: public interiority as a framework for societal dialogue

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## ABSTRACT

Through social activism set within the urban fabric, Rosa Parks reminded us that human beings are of one race, the human race. Her act of peaceful resistance launched from the interior space of a Montgomery public bus challenged entrenched racism and helped usher in the Civil Rights Movement. Parks' act proves tangible activism is possible through micro-interventions. It illustrates that interior urban thinking is an invaluable mechanism of social engagement and contextual mediation. The research aims to understand the role of nominal public spaces in activating community interactions and addressing racial biases. It studies the role micro public spaces play in fostering communication that advocates for empathy and social inclusion by employing interior-centric strategies. Due to their communal nature, micro-urban commons such as sidewalks, parking spaces, bus interiors, and bus stops are prime sites for fostering active exchanges and engagements. Such spaces can nurture empathetic conversations that are key to reducing stigma and increasing an understanding of our differences as well as our inherent similarities. As hyper nodes of activities, micro-urban Commons see significant traffic daily; yet, they remain underutilized with regards to their communicative value and societal impact. This research extracts their inherent potential and sheds light on the vital role such spaces can play in propagating meaningful exchanges. Communal urban settings rely heavily on public interior systems such as benches, canopies, and signage to cater to users and demark their spatial presence in the city. These urban systems and objects offer opportunities for further intervention to enhance social connectivity and information dissemination. Now more than ever, the provision of communication-oriented spaces and infrastructures for the broad community is a social and public priority. In the first phase of the research, we pinpointed four districts in the city. We analyzed the various parameters of those locations and generated a comprehensive set of urban cartographies that study the physical and social attributes of the sites. We assessed occupancy

throughout the day and registered the frequency of social exchanges and interactions. Furthermore, the analysis looked at existing urban cues that encourage interaction and exchanges, such as benches, vegetation, Wi-Fi hotspots, etc. Based on the findings, we proposed various design solutions to retrofit existing elements in the urban landscape. Working directly with a local community coalition, we designed speculative interventions in the city to advocate for empathy and social inclusion. In conclusion, urban Interiority poses a distinct aptitude for propagating non-confrontational approaches to stereotypes and prejudices. A framework for societal dialogue is anchored in open and honest communication; it hinges on a tactical urbanity with interior-centric cues for transformation to greater community acceptance, tolerance, and cohesion. The multi-scale study of spatial, social, and economic parameters of micro-urban commons proved the impact of urban interiors in the city's landscape. It allowed nominal urban locations to transfigure into respite sites and active communication nodes.

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## MICRO-URBAN COMMONS: PUBLIC INTERIORITY AS A FRAMEWORK FOR SOCIETAL DIALOGUE



PHOTOMONTAGE FROM THE INTERIOR OF CITY BUS SHOWING PRESENT URBAN FABRIC SUPERIMPOSE ON A HISTORIC MAP.

## MICRO-URBAN COMMONS: PUBLIC INTERIORITY AS A FRAMEWORK FOR SOCIETAL DIALOGUE



PINPOINTING SEVERAL MICRO-URBAN COMMONS IN THE CITY FOR WITH HIGH PEDESTRIAN ACTIVITY. THESE SPACES OFFER OPPORTUNITIES FOR INTERVENTION

## MICRO-URBAN COMMONS: PUBLIC INTERIORITY AS A FRAMEWORK FOR SOCIETAL DIALOGUE



DESIGN INTERVENTION IN ONE OF THE PINPOINTED NODES CONVERTING A BUS STOP INTO AN URBAN GREENSPACE WHERE OCCUPANTS CAN ENGAGE WITH OTHER PEDESTRIANS.

## Oh, BOY: Geographic and Disciplinary Diversity in Interior Design magazine's Best of the Year Awards, 2016-2020

Roberto Ventura, Virginia Commonwealth University

## ABSTRACT

MOTIVATION Interior Design magazine's Best of the Year (BOY) awards annually recognize some of the best design work in the world. As the flagship trade publication in American interior design, Interior Design has an opportunity to introduce role models and inspirations for students of design as they develop their own aesthetics and philosophies. Accordingly, "(o)ur sense of what is possible in our careers," write Sealy and Singh (2008), "is influenced by what has gone before...and how we draw inspiration and learning from leaders past and present in our own identity development." ISSUE The BOY program provides students and practitioners with design exemplars. Historically, the canon of design has been dominated by European and American architectural perspectives. As designers recognize the importance of diversity, inclusion, equity and justice, it is worth exploring how the BOY program fits into this historically exclusive context. How inclusive, in terms of discipline and geography, are Interior Design magazines BOY awards? METHODS Online presentations of Interior Design's BOY program from 2020 to 2016 were examined to gauge inclusion from a disciplinary and geographic perspective. Category winners and honorees were audited to determine the location of the design office primarily responsible for the works in question in order to gauge geographic diversity. Next, the project designer(s) in each office was/were identified. In cases where actual team leaders were not identifiable, principles of design firms were recorded; if no information was available—for example the practice dissolved, or had been absorbed by another practice the firm was left out of the calculations. Each of these individuals was then researched to determine their disciplinary background. RESULTS With respect to disciplinary diversity, the percentage of designers identified as having interior design specific practice shrunk in the

interval between 2016 and 2020. Despite an increase in the number of categories and recipients of BOY recognition, the amount of interior design firms recognized dropped thirteen percent from forty-one (out of 211, or 19.4%) in 2016 to thirty-six (out of 249 or 14.5%) in 2020. Relative to overall numbers, this resulted more than a 25% decrease. Architecture was the most widely awarded discipline in 2016 (52.7%) and in 2020, increasing to 59.5%. Geographically, award-winning practices were heavily concentrated in the United States and Asia. In 2016, 154 of recognized practices were from the U.S. (62.8%). Of that, 72 were from the greater New York City area; this total exceeded that of all of Asia, the second-highest geographic concentration (44). In 2020, this trend transformed: of the 286 awardees, 53.4% were located in the U.S. Of this number, 64 were located in New York City, but Asian firms increased their representation to 82. REFLECTIONS The BOY awards present great opportunities to celebrate interior design and to introduce new generations of students to emergent and admirable practices. However, there is a steady decline in the number of interior design practices being honored. Increasingly, architectural firms are capturing this recognition in the BOY program. Although Asian designers are increasing in prominence, the geographic diversity of work also appears to be limited, raising the question of equity in the submission and recognition process. If these trends were to continue, one may begin to question which venues will be available to publicize and celebrate the work of interior designers on such a broad platform. It also suggests fewer role models may arise for students of interiors across the nation. As they fail to see themselves reflected in flagship publications, they may also begin to question the validity of their own degrees, vocations, and identities. This crisis of confidence could be damaging to a profession that often fights for legal recognition in many arenas.

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# Perceptions of professional titles: A survey of faculty members comparing interior design vs. interior architecture

Kayley Tuchek, Iowa State University

## ABSTRACT

Interior design struggles with perceptions of professionalization in part because of lack of a definition, which comes from having multiple titles within the profession (Havenhand, 2004; White, 2009). In addition, interior design has remained in a subordinate and feminine position because of its connection to domesticity, taste, and comparison to architecture (Turpin, 2007). This gendering of the profession has led to public confusion over the profession's status and definition, as well as creating issues of diversity and professionalization (Cunningham, 2015). It is important to understand where professionals stand on the use of multiple titles to understand what title better represents the profession and could be the unifying title. Unifying the profession under one title could allow the profession to formally define itself and complete the steps towards professionalization (Dickson & White, 1993). The purpose of this study was to understand perceptions of the titles interior design and interior architecture by faculty members in these programs. The study was conducted with these research questions: How do faculty in interior design and interior architecture programs perceive the interior design vs. interior architect dichotomy? How does the prestige of the titles interior design and interior architecture play into faculty perceptions? How does the gendering of titles play into faculty perceptions? What title do educators think the profession should be united under? The method was a crosssectional survey of IDEC members excluding international members and graduate students as the study focused on experienced members in the United States. IDEC members were selected as their opinions represent a wide range of professional backgrounds and they are in a position of influence with upcoming designers. The survey consisted of 10 questions including five demographic and five quantitative Likert scale questions with an opportunity for write-in

qualitative responses. A link to the Qualtrics survey was distributed via IDEC administrators to the target group. From 393 invited, 149 participants responded answering at least one question (38% response rate). Data was analyzed using Qualtrics, Saldana coding strategies, and SPSS statistics. Faculty (78%) gendered interior design as feminine with participants viewing it as more residential (18 mentions) and decorative (35) (Fig. 1 and Fig. 2). Architecture, on the other hand, was considered masculine (60%), with the title holding more weight because of its masculinity (Fig. 3). Prestige also affected the perception of titles. Architecture was considered a highly prestigious profession (90%), while the prestige of interior design was highly disputed (41% low, 30% neither, 29% high) (Fig. 4, Fig. 5). One participant stated, "Any career that is primarily women-teaching, nursing, design-are all considered to have lesser value than maledominated careers." Participants were undecided on whether it would be better to unite under one title (Fig. 6). Interior architecture was the preferred title of the profession by 61% of respondents with statements indicating interior architecture held more technical value than the title interior design (Fig. 7). Some participants suggested that the residential and commercial sectors of the profession should be how the profession is split, stating different skill requirements. Overall, participants were aware of the issues that hindered the profession but are uncertain how it should be represented and defined. The study highlighted that the profession should come together to fully determine the best title and way forward to complete professionalization.

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#### Appendix

#### **Survey Data Results**



Figure 1: Percentages of participants ranking of the Interior Design profession as Feminine or Masculine.



Figure 2: Frequency of theme within participant response in the feminine category.



Figure 3: Percentages of participants ranking of architecture profession as feminine or masculine.



Figure 4: Percentages of rank in the Low Prestige, Neither Low nor High Prestige, and High Prestige categories for architecture.



Figure 5: Percentages of rank in Low Prestige, Neither Low nor High Prestige, and High Prestige categories for interior design.



Figure 6: Percentages of participants choosing to unite the profession of Interior Design and Interior Architecture.



Figure 7: Percentages of titles participants choose to unite under.

## The Role of Physical Design in Improving Self-Regulation in Children: A Theoretical Exploration

Reem Bagais, Texas Tech University Debajyoti Pati, Texas Tech University

## ABSTRACT

Background: All children are entitled to feel the full range of emotions and have opportunities to grow in healthy ways to manage themselves in a safe and supportive environment. The environment is an important aspect of child development, and it represents the external source that affects a child's cognitive, behavioral, mental, and social development. According to Bronfenbrenner's ecological system model, it is crucial to understand the interactions between a child and their environment. This interaction can influence and shape the development of selfregulation (SR), the cognitive, behavioral, and emotional processes that drive actions involved in managing stress. Stuart Shanker (2013) defines self-regulatory skills as the ability to manage stress and deal with stressors effectively and efficiently, then return to a standard of being calmly focused and alert. Essentially, a child's home is part of a complex microsystem referred to as the immediate environment, which refers to all physical and non-physical environmental factors that directly affect child development, including SR. The more chaotic the environment, the more difficulties the child will face. As interior design is a component in the child's physical environment, it stands to reason that design can play a role in improving SR. Studies have shown that poverty impedes children's SR skills directly and indirectly and that early exposure to poverty is often adversely related to child development (Baumeister & Vohs, 2004; Evans & Rosenbaum, 2008). Unfortunately, there is very little research in this area that addresses physical environmental factors in low socioeconomic households. To address this issue, research on the role physical environment plays in child development is needed. This research requires a framework that ties together theories on environmental design and establishes a relationship between physical environment and a child's ability to self-regulate and manage stress. Objectives: The purpose of this study is to build a theoretical framework that explores

relationships between the physical environment and SR skills in children from lower socioeconomic status. Using a variety of theories, such as chaos theory, allostasis theory, and Bandura's self-regulation theory, this study establishes a foundation for further study on the importance of physical environment. These studies may include quantitative and qualitative research aimed at helping children improve SR skills, which could help them break free from the poverty cycle through the implications of design. Method: To accomplish the objective of this study, a scoping review was conducted that includes 23 sources of published literature and theories from different disciplines including mathematics, psychology, family science studies, and environmental design. The review is connected to three of the five practices outlined in the Shanker Model of SR: reducing stress, reflecting, and enhancing stress awareness, and restoring energy. The completion of this review addressed the following research question-what roles does the environment play in developing SR? Significance of the study: The failure to investigate the importance of physical environment continues to limit the impact of interior environmental design research concerning SR behavior. By understanding the relationship between physical environment and SR, future research can identify aspects of the physical environment with the greatest impact on children's SR. Design solutions that are cost affordable or funded through outside sources can then be developed and tested within the target population. This research is intended to shift the focus of the design community to this issue as a means of improving the design of low-income housing. Furthermore, this research also aims to make stakeholders and policy makers aware of the importance of design in improving SR to transform the practice of interior design in these homes.

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## Using fMRI Technology and Virtual Environments to Identify Neurological Responses to Sensory Stimuli

Kristi Gaines, Texas Tech University Michelle Pearson, Texas Tech University

## ABSTRACT

A body of research shows that human behavior is influenced by design features within the built environment. For individuals with Autism Spectrum Disorders (ASD), sensory responses to environmental stimuli may be different than the general population (Gaines, Bourne, Pearson, and Kleibrink, 2016). Particularly troublesome for some individuals with ASD is sensory processing in regards to responding to aspects of the built environment. (Martin, 2016). Unfortunately, the majority of environment and behavior studies address the perceived impact of environmental stimuli on people. This exploratory study utilizes functional Magnetic Resonance Imaging (fMRI) and virtual environment technology to show the way the brain functions in response to sensory input. Previous fMRI studies have shown differences in brain activity for people with and without ASD (Grandin, 2013; Buxbaum & Hof, 2013). In addition, virtual reality tools and techniques have been used by cognitive psychologists to compare experiences of real environments and a virtual counterpart. By using virtual models, design researchers may experience a real environment in an inexpensive way. Game engines allow for more realistic experiences. The purpose of this study was to determine if modifications in environmental design features result in changes in neurological activity for individuals with ASD and how those changes vary from neurotypically developing people (NT). Methodology: Institutional Review Board approval was obtained. The participants for this study were individuals ranging in age from 16 to 22 years old and included 5 people with ASD and 9 NT subjects. Two of the NT participants were excluded from the imaging analysis due to an abnormal cranial structure. The research study was conducted at a Neuroimaging Institute. Augmented reality visualization (virtual environments and fMRI) were utilized to gather data on reactions to specific features of
the built environment for individuals. Participants viewed 6 virtual classrooms during the process of imaging (15 seconds each). Four of the videos were extracted for the data analysis and included: (1) low environmental stimuli (neutral floor, artificial light, no clutter), (2) classroom with a checkerboard floor, (3) classroom with daylight/cloudy, and (4) classroom with direct daylight including harsh shadows. Additionally, between each scene presentation, participants were given 10 seconds to rate the "pleasantness of the environment (on a scale of 1-7) using fiber optic response buttons. An independent-samples two-sided t-test was conducted to examine group differences for people with ASD versus NT for the presented classroom environments. Several significant and marginally significant results were shown between group preferences. Findings/Relevance to Interior Design: Neurological changes were observed between each of the 6 environments adding to the validity of using virtual environments in interior design research. In support of our hypothesis, we predicted there would be decreased activation of the fusiform gyrus in the participants with ASD, which was found across all our classroom stimuli with, understandably, the exception of low clutter. Contrary to our hypothesis, however, we believed there would be increased activation of the amygdala, paired with negative behavioral ratings associated with the group with ASD (Adolphs, Russell, & Tranel, 1999) in the more stimulating classroom environments - specifically in the checkerboard stimulus. Instead, however, behavioral results indicated there was a strong preference for the checkerboard pattern among participants with ASD. If selected for the conference, this presentation will show the virtual environments used in the study, the fMRI scans, additional findings, and provide useful application in interior design practice. This research project also provides new and relevant research methods to determine the impact of environmental features on inhabitants.

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## APPENDIX

# Images of classroom videos



Low Clutter Stimuli



**Checkerboard Floor** 



**Direct Sunlight** 



Cloudy

# Sample Neuro Images from the study



Low Clutter Stimuli; NTActivation > ASD Activation







CheckboardStimuli; ASD Activation > NT Activation

Direct Sunlight Stimuli; NT Activation > ASD Activation



Low Clutter Stimuli; NT Activation > ASD Activation



Cloudy Stimuli; ASD Activation > NT Activation



Checkboard Stimuli; ASD Activation > NT Activation



Direct Sunlight Stimuli; NT Activation > ASD Activation

# Results

| Condition           | Contrast         | Cluster Size<br>(Voxels) | Z-Max | Max MNI Coordinates<br>(X, Y, Z in mm) | Region of Maximum<br>Intensity |
|---------------------|------------------|--------------------------|-------|--|--------------------------------|
|                     | ASD-NT           |                          |       | No Significant Activation              |                                |
| Low Clutter Stimuli | NT-ASD           | 8651                     | 9.1   | (-2, -80, 48)                          | Precuneous Cortex              |
|                     |                  | 612                      | 4.59  | (-36, 66, -10)                         | Frontal Pole                   |
| Checkboard Floor    | ASD-NT<br>NT-ASD | 4431                     | 7.26  | (18, -58, -8)                          | Right Lingual Gyrus            |
|                     |                  | 718                      | 5.49  | (-28, -86, 6)                          | Lateral Occipital Cortex       |
|                     |                  | 512                      | 4.76  | (-16, -62, -6)                         | Left Lingual Gyrus             |
|                     |                  | 1268                     | 6.88  | (-4, -82, 48)                          | Precuneous Cortex              |
|                     |                  | 846                      | 5.95  | (28, -84, -16)                         | Occipital Fusiform Gyrus       |
| Direct Sunlight     | ASD-NT<br>NT-ASD | 810                      | 6.97  | (12, -86, 26)                          | Cuneal Cortex                  |
|                     |                  | 10926                    | 10.3  | (28, -84, -16)                         | Occipital Fusiform Gyrus       |
|                     |                  | 4685                     | 4.98  | (-2, 32, 56)                           | Superior Frontal Gyrus         |
|                     |                  | 445                      | 4.54  | (12, -48, 0)                           | Lingual Gyrus                  |
|                     |                  | 393                      | 3.94  | (24, 22, 18)                           | Right Cerebral White Matter    |
| Cloudy              | ASD-NT           | 2844                     | 7.53  | (18, -58, -8)                          | Lingual Gyrus                  |
|                     |                  | 1674                     | 4.85  | (-8, -24, 0)                           | Left Thalamus                  |
|                     |                  | 693                      | 5.93  | (60, -58, 24)                          | Angular Gyrus                  |
|                     | NT-ASD           | 660                      | 4.66  | (-4, 16, 42)                           | Paracingulate Gyrus            |
|                     |                  | 1075                     | 6.05  | (28, -84, -14)                         | Occipital Fusiform Gyrus       |
|                     |                  | 608                      | 5.46  | (-4, -82, 48)                          | Precuneous Cortex              |

## Scholarship of Design Research | Globalism & Multiculturalism | Presentation

# The Researcher in Participatory Design-Implications for Interior Design Research, Teaching, and Practice

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### ABSTRACT

Much of the discussion around participatory design unearths the benefits to the communities engaged - from building an underserved community's capacity to citizen empowerment, increasing social capital, and promoting connections (Brown Wilson, 2018; Sanoff, 2006). Equally important however, is the question of what participatory design means to the designers/researchers themselves. This question attains further dimensions and a heightened level of sensitivity when the researcher is a member of the group involved in the participatory design process, particularly when that group has experienced injustice. Delving deeper into this question can shed light on challenges and opportunities that can enhance how interior design research, teaching, and practice can amplify the impacts of participatory design and community engagement at a time when racial and social justice are at the forefront of envisioning the future. This paper draws on the author's participatory design experience while leading the development of a design proposal for Kontea's memorial for murdered and missing. It has been 47 years since the Turkish invasion that divided the island of Cyprus in 1974 and resulted in thousands killed or missing. Nine of those individuals come from the author's now occupied village of Kontea. The proposed memorial aims to honor these nine people and help survivors come to terms with a traumatic past, while acknowledging the present, and looking toward the future (Lowenthal, 1985). The first step to the design proposal was a review of both collective and individual memorials from around the world-from the "Say their names" cemetery in Minneapolis to the Steilneset Memorial to Victims of Witch Trials in Norway. Next was a collection of written materials, photographs, and archives to better understand each of the nine persons' stories. And then, a participatory design process ensued that activated, among others, the families of those

murdered and missing; the village's administration and fund-raising committee; neighbors, including an assisted living facility and a hotel; the Committee on Memorials from the Cyprus Ministry of Education, Culture, Sport, and Youth; the Kontea diaspora in places like the United Kingdom and the United States; local artists, sculptors, and architects; as well as elementary school educators. Inherent in this study's approach is the idea that the researcher is in fact the study's subject. It is not often that an interior design educator/researcher gets the opportunity to identify and lead a participatory design process. Examining the process through both the lenses of the personal and the collective allows us to bring additional questions to the table that might not have been visible had the two roles not been able to intersect. Examples include: What does it mean for a researcher to have to re-expose themselves to painful histories and memories? Where does the researcher find the inner balance needed to navigate what can often be divergent needs? And, how does a researcher maintain "neutrality"? By shifting our focus to the researcher, this study points to two areas of potential interventions in how participatory design is approached and conceived: a) embracing the process, and b) infusing space and time for a personal introspection. The paper closes with implications of these interventions for interior design research, teaching, and practice. These include pedagogical interventions that spell out where and how to prepare both BIPOC and non-BIPOC students for the emotional journeys of participatory design to structural methods for developing a mindful presence during the process, one that honors the people you meet, the places you go, the dialogues you have, and the lessons you learn.

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## Scholarship of Design Research | Globalism & Multiculturalism | Presentation

# Design Practitioners' Perceptions of Design Acculturation: A Developing- Country Perspective

Adrian Del Monte, University Florida / University of San Carlos Nam-Kyu Park, University of Florida

### ABSTRACT

Developing countries are massively changing their social, economic, cultural, and demographic settings to fit into developed nations' norms drawn by colonialization and globalization. In turn, cultural adaptation and modifications occur on the prevailing cultural norms resulting from the continual contact and/or exchange from another culture. Berry (2008) defined this process as acculturation, wherein groups or individuals with different cultures engage in a social and psychological interchange involving cultural maintenance and adherence to a dominant culture. Integration, assimilation, separation, and marginalization are its strategies to help understand each acculturating person (Berry, 2008; Sam & Berry, 2010). Acculturation studies are relevant in a diverse field, including the built environment as part of the decolonization process and identity assertion among previously colonized communities. This study documents a practicebased standpoint on residential design among design practitioners of a developing country in the context of understanding acculturation its design identity. Establishing its own design identity is something that developing countries have struggled with for ages and could be understood through varying strategies of acculturation. As a distinct referent, design practitioners, like interior designers and architects, could facilitate a dexterous perspective and substantial contribution in the continual quest for design identity among developing countries. Now more than ever, it is important to examine practitioners' knowledge, competence, and approach to draw a new understanding based on reflection from their design practice (Schön, 2016). Unfortunately, research on design practitioners' perspectives on the acculturation of residential design is scarce. Building on these suppositions, this study explored the following research

questions: (1) How does the perceived design acculturation on residential buildings of a developing country resulted in different acculturation strategies? (2) How does the nature of design acculturation impact the current local residential design practice? The data were collected concurrently using a mixed-methods approach among design practitioners. 153 design practitioners completed the online survey, and 39 of them participated in the individual interviews. The findings of this study support the idea that communities are constantly struggling to maintain their cultural identity or adopt the norms and standards of a prevailing culture (Sam & Berry, 2010). As such, integration is the preferred mode of acculturation among study participants. In contrast, few respondents showed modes of assimilation, marginalization, and separation. Furthermore, the findings revealed how practitioners' perceptions of acculturation could significantly affect local and vernacular designs relative to years of design experience, design application, and current and future design applications. The extent to which the design participants have acculturated could affect how they perceive and practice the current residential designs. These outcomes align with the idea that not all design practitioners engage in a multicultural design process in the same way and informed alternative understanding on how residential design is practiced among design practitioners. We will share these findings along with the attributes that influence design practitioners' acculturation strategies and the evolution, including its adaptive implications and multicultural compositions of residential designs in a developing country. As designs evolve, the practice of residential design from a developing country should be understood according to its progressive nature, and that design should celebrate culture, tradition, and diversity inclusive of the past and what the future might be.

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## Scholarship of Design Research | Globalism & Multiculturalism | Presentation

# Interior Experience: Threshold, Boundary, Edge, Public Space Outside-Inside

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## ABSTRACT

INTERIOR EXPERIENCE: THRESHOLD, BOUNDARY, EDGE – PUBLIC SPACE OUTSIDE-INSIDE Question: In the global context and realm of public urban space is there a universal understanding of spatial threshold dividing outside from the inside? Is an operational lexicon of spatial experiences universally understood? Or where does an inside begin from an outside in public settings and is there an architectural marker, threshold, that has universal agreement within the spatial context? These questions were the theme for master thesis students in an international interior architecture workshop offered in summer 2021. These classic questions were placed to majors from Germany, Switzerland, Turkey, and India during a weeklong workshop. Required outcomes were to produce short video analyzing and documenting familiar public spaces in student's localized urban environments. Our directive: Is the interior experience of public spaces a condition of events removed from the architectural shell tectonics? The critical focus was on the public realm of spatial experiences to engage programmatic, psychological and atmospheric conditions, and the formal influences of architectural enclosure to bring into question the threshold, the boundary, and the edges separating the architecture and the interior. At issue was the interior phenomenon as subject to architectural technical conditions of structural enclosure or NOT: an interior of experience and perception bringing inhabitants to a sense of defined dimensions and place; and can the condition be void of architectural enclosure and building partitions and overhead planes to communicate threshold of inside outside. Our exploration was to place these questions within a diverse social-cultural mix of personalities for a global perspective. Methodology: Our pedagogical methodology was to frame these questions into having students look at the many ways classic iconic spaces can be perceived as precedents, and the many ways to define the conditions of the interior. Our dialogue used well-known examples to illustrate an analytical approach: 'A wonderful interior space of monumental scale is

Bermini's 1667 plaza of St Peters in Rome on Sunday when the Pope addresses thousands gathered for Sunday prayers. Hours before only a few hundred tourists occupied this vast space. At the Pope's address this large space transforms, Bernini's plaza goes from an exterior square of enormous dimension to an interior space of personalized enclosure focused on one person.' And 'Not far from Rome is Siena's to-die-for Piazza del Campo, one of Europe's greatest medieval public squares. The same transformation occurs twice a year with the Palio horse race that reconfigures this main public space into a stadium event where individuals are localized into close dimensions.' We used these types examples with individually assigned spaces for analysis in their familiar local settings Outcomes: There are many examples of interior / exterior spatial interchanges in all cultures and societies around the world. The workshop took advantage of the varied cultures and global locations to analyze 'interior' qualities outside traditional urban building envelopes with the international students. The goal was to flush out ideas of how interior qualities might be interchanged and accommodated within different urban circumstances. The exercise was less about restructuring designs but reimagining spaces from simple rearranging of activities and program - the Palio & Piazza San Pieto - to explore architectural markers for perceptional alteration of space(s). Deliverables were videos of attitudes and images of spatial possibilities linked to varied global locations in Europe, Turkey, and India. Analytical outcomes were inconclusive; varied localized settings, traditions of occupied public space and personalized interpretations factored in. However clearer inside-outside understanding of spatial possibilities was achieved as a pedagogical achievement.

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# The Deconstruction of Spatial Theory- A Formative Process Towards the Theory of Interior Design

Jerome Gomez, Converse University

## ABSTRACT

In the development of creative design projects and, to some extent, research in Interior Design, Architectural Theory has supplied the framework for designers and educators to visualize the developmental process. Borrowing this concept on behalf of interior designers has delayed the development of their theory. This research focuses on deconstructing the concept of spatial theory through historical constructs and leading contemporary theorists to identify a unique framework towards a foundation for Interior Design. Discoveries evidence a shared historical nature with Architectural Theory, but by stepping outside of design, it provides an alternate perception of space leading towards A Contemporary Theory of Interior Design. Points were taken from leading spatial theorists, including Alberto Perez-Gomez, outlining man's spatial evolutions presented here as an overview of the conceptual understanding of chora. Held within the concept of chora are distinct interpretations derived through classical philosophy, the manifestation of the Vitruvian trilogy, and the transformation based on the theoretical insights of the Enlightenment period. As part of an ongoing process to understand chora, its origins, and where it may be leading us in the field of interior design. This research analyzes and critiques Tschumi's paradox of space. The deconstructive nature of the process breaks down opposing philosophical constraints. It reveals the core of Tschumi's paradox of space derived from three distinct aspects. These aspects noted as the pyramid of reason, the experiential labyrinth, and the emerging process of truth through Correspondence are bound by the constant variable known as the conceptual plain of human existence that occurs within all levels of the paradox. The pyramid of reason, presented through a hierarchy tier system, is examined through the same methodology found within the writing. In exploring Bachelard's dialectic, the object/concept process, and Barthes' space of modern text through the concept of opposing points of view, each layer of the

pyramid reflects the individual aspects of how conceptual environments are derived. In contrast, as seen through the writings of Bataille and Pallasmaa, the experiential labyrinth contains two spatial qualities echoing the concepts of materiality and human sensorial effect, respectively. Both traits are deconstructed to the common core principles of gathering, building, and boundary, exposing the essence of contemporary symbolic space. Following the understanding of Tschumi's paradox and offered within the conclusions is the revolutionary concept of truth through Correspondence and the plain of human existence that binds all aspects into one spatial understanding.

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# **TSCHUMI'S PRYRAMID OF REASON**







# SPATIAL THEORY



HOW THE MIND THINKS

HOW THE MIND

HOW THE MIND THINKS

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# Easternizing Western Design: Haipai Interiors and the Development of Cultural Identity in Shanghai, China

Chunyao Liu, University of Florida Erin Cunningham, University of Florida

## ABSTRACT

This paper examines Haipai interiors, arguing that Haipai interiors are essential physical representations of cultural interactions between the East and the West in Shanghai, China. Haipai, literally translated as Shanghai-style, is a term that refers to the unique architectural style and culture of Shanghai. When the term was originally coined in the early 20th century it had negative connotations, referring to a departure from tradition or orthodoxy, especially the influence of Western culture that was associated with imperialism. However, over the course of the 20th century, the meaning of Haipai has transformed into a positive term that refers to a blend of the East and the West, the traditional and the modern, and the local and the global. Today, the meaning of Haipai has expanded to reference a significant part of Shanghai culture that connects to the avant-garde, cultural inclusiveness, and cosmopolitanism. This growing popularity of Haipai has led to renewed interest in buildings constructed in former foreign settlements within Shanghai before the 1930s. Specifically, this paper examines a series of Garden Villas that were erected within these foreign settlements. A Garden Villa is a special type of detached residential architecture that emerged in the late 19th century. The exteriors of Garden Villas typically display Western architectural styles like Neoclassicism and Art Deco, while the interiors capture the spirit of Haipai with the inclusion of multicultural interior design elements. For example, one might see Western fireplaces showcasing traditional Chinese or Chinoiserie imagery, or one might see Art Deco motifs juxtaposed with classical elements and Chinese wooden carvings. Thus, this paper argues that Haipai interiors are important to analyze because they provide significant resources to understand the cultural interactions between the East and the West in Shanghai, China. This paper couples historical methods with site analysis

and direct observation of physical artifacts to explore: How the concept of Haipai emerged and evolved over the course of the 20th century; how Haipai interiors showcase an integration of multicultural design elements; and, finally, how Haipai interiors reflect Shanghai's diverse culture, multi-layered history, and cultural identity. The historical analysis is based on archival sources gathered from the China National Index of Newspapers and Magazines Database, the Shanghai Municipal Archive, and Shanghai Local Chronicles. It also examines drawings, images and promotional materials provided by developers involved in the restoration of Garden Villas. Site analysis and direct observation provide detailed information of the "character-defining elements" of Haipai interiors, helping to uncover the integration of Eastern and Western cultural forms. This paper builds on a body of literature within the design field that examines cultural interactions between the East and the West after industrialization and colonization. Design scholars, such as John Potvin and Penny Sparke, have conducted thorough explorations of the meaning of Eastern design elements in Western contexts and examine the concept of "Oriental interiors," which is not merely a style inspired by the East, but a complicated issue that ties to identity, gender, and consumption (Potvin, 2015). Expanding on the study of "Oriental interiors" in a Western context, this paper examines the use of Western forms in an Eastern context. Through its examination of Haipai interiors, and the reception of Western forms in Shanghai, this paper breaks the stereotyped dichotomy between Eastern and Western design, pushing the boundaries of our knowledge of "Oriental interiors".

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Figure 1. Foreign concessions in Shanghai in 1919. The yellow areas show international settlements owned by the British and American; purple areas are French settlements. Garden Villas are located in Western District (1899), a relatively new expansion compared to the central district (1849), and the west part of the French Settlement, by author, 2021.



Figure 2. Floor Plan of a Haipai Garden Villa - Rong Zhai's second floor, by author, 2021.



Figure 3&4. A Western fireplace showcasing Chinoiserie and Chinese imagery in Rong Zhai, by author, Jan 1, 2019.

Figure 5. Western stained-glass displays Chinese imagery in the sunroom of Rong Zhai, by author, Jan 1, 2019.





Figure 6. French-inspired Art Deco stained-glass ceiling of the ballroom in Rong Zhai. Photo taken by author, June 2018



Figure 7-11. Haipai interiors of former garden villas. Shanghai Philharmonic Orchestra (Fig. 7&9), Shanghai Water Authority (Fig. 8 & 11), Ruijin Hotel (Fig.10), from *Inheritance (*传承), 2006.



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# Interiors and Identity on the Rio Grande, 1750-1821

Marie Saldaña, University of Tennessee

## ABSTRACT

The house that Eugenio Ramírez and María Rita de la Garza Falcón built on their ranch around 1800 is now submerged under the waters of the Falcon International Reservoir, a portion of the Rio Grande river that forms the border between the United States and Mexico. In 1767, the King of Spain granted porciónes, or narrow strips of land fronting the Rio Grande, to settlers of the new colony of Nuevo Santander in return for creating and defending new towns and ranches. Located on the east (now Texas) side of the river, the Ramírez homestead was built on porciónes under the jurisdiction of Revilla, a town on the west (Mexican) side. Both the town and the surrounding ranches were destroyed when the Falcon dam was built in 1953 (The reservoir takes its name from the homestead where María Rita de la Garza Falcón lived with her five sons for many years after the death of her husband). Eugenio and María Rita were the second generation of settlers in Nuevo Santander. They came from interrelated families who had lived in the vicinity of Monterrey and Saltillo for many generations, and who moved to the Rio Grande in order to obtain land of their own and to operate independent ranchos. The settlers of Nuevo Santander, as small landowners, acquired the status of hidalgos, and with that the right to use the title don, making them members of the petty nobility. However, they lived lives that were far from luxurious. Most did their own labor, though some were able to afford a few servants. They were under constant threat of raids by Indians from the north, and built their houses to be fortified and safe, rather than comfortable. Their efforts helped establish the ranching tradition that Texas now celebrates. The material culture of the early settlements in the Rio Grande Valley has long been at risk, impacted by the imposition of an international border, infrastructural projects like the Falcon dam, and today by the political and humanitarian saga of the modern borderlands. My research seeks to understand the lives of the settlers through the lens of their spatial environment. While little architectural evidence remains, several of the homesteads were

surveyed by W. Eugene George in the 1950s, before the construction of the dam (1). Archival evidence, such as legal documents and wills, give some insight into the materials used to build houses and ranches, as well as the everyday objects that filled them. Using these sources, I consider the notions of interiority that shaped the identity of the settlers as determined by their social and geographical context on the edge of an empire. I also examine the reasons why Texas colonial architecture did not become mythologized by 20th century designers as was the comparable history of California or New Mexico.

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# Recollecting Space: The Social and Spatial Dimensions of an Architectural Fragment

Erin Cunningham, University of Florida

## ABSTRACT

In 1915, a water fountain was mounted at the entrance to Chicago's Hull House, the famed social settlement on the city's west side. The fountain commemorated the short life of Hull-House resident, Elizabeth Swing. It stood in this courtyard for 48 years until 1963 when Hull House was demolished to make way for a new university. At that time, it was removed and placed in storage where it remains today. Little historical evidence exists about this fountain. We have the fountain itself, a 1961 letter from a past Hull House resident asking that the fountain to be saved—likely the impetus for its removal and storage—and a passing mention recorded in the minutes of a university meeting. The fountain is also depicted in a 1934 painting by Depression-era artist Leon Garland in which "unemployed men" congregate around the fountain scanning newspapers for job ads. This painting, alongside the letter and the meeting minutes, furnish a portrait of the fountain's former life. As a surviving fragment from an important historical site, what else might it tell us about the space it occupied? This paper demonstrates that this fountain commemorates more than Elizabeth Swing; it centered a space that was a hub for community gatherings, hosted the games of neighborhood children, and celebrated political triumphs. But we might understand the fountain to do more than hosting; we might understand the water it supplied to structure social and spatial relationships—an idea that sounds abstract but is grounded in specific historical examples. Historically, water fountains have played an important role in American culture. In the 19th century, fountains provided poor, urban neighborhoods with public access to safe drinking water. As part of the temperance movement, they were sited strategically as an alternative to saloons. In the era of Jim Crow, fountains would reflect a racial ordering specific to the built environment. More recently, the discovery of lead and other toxins in drinking water in places like Flint MI has led to the abandonment of many drinking fountains. As we can see from

these examples, fountains represent more than vessels to drink from they are flashpoints for social and spatial relationships (Linton, 2001). Through an historical analysis of the life of one small drinking fountain, this paper explores the relationships that material culture, and the services they provide, sustain. This paper relies on historical research methods, including archival research conducted at the University of Illinois at Chicago's Special Collections and a historiographical analysis of secondary sources. It intersects with three scholarly conversations. The first deals with architectural fragments. The fountain, an architectural fragment, is examined as a "metonymic" symbol- a small part of a space that is able to "stand for the whole. (Van der Hoorn, 2003, p. 198)." The second conversation concerns the everyday. If fragments are constitutive of their spaces, this paper also argues, in keeping with theorist Michel de Certeau (1988), that they can reveal a story of the everyday, and how the movements of ordinary people shape spaces. The third scholarly conversation explores the intangible. By tracing stories told about this fountain, this paper argues that fragments connect us to intangible resources - like rituals, and social practices. In this manner, it builds upon literature that argues that a focus on the intangible alongside the tangible is critical for capturing the "often provisional nature of minority groups' experiences" (Buckley & Graves, 2016, p. 153). Taken together, this literature deepens our understanding of fountains and water, the interiors they occupy, the people they impact, and the relationships they structure. Building on this literature, this paper is an invitation to not overlook details in our interior spaces, to recognize how small things-like fountains-are fundamental to how space is understood and interpreted.

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Figure 1: Granite Fountain, recovered from Hull-House Settlement demolition in 1960s. 23  $\frac{1}{2}$  x 20 x 12 1/8 in. (overall). Photo courtesy of Jane Addams Hull-House Museum.



Figure 2. Leon Garland, *Hull-House Courtyard (Unemployed Men)*, 1930-31, oil on canvas. Image Courtesy of Jane Addams Hull-House Museum.

Scholarship of Design Research | History & Theory | Presentation

# The Future that Never Was: Experimentation in Late-Soviet Housing Design

Yelena McLane, Florida State University

## ABSTRACT

Nobel laureate Dennis Gabor once said, "the future cannot be predicted, but futures can be invented" (as cited in Goldsen, 2018). When turned to the domestic, presumptions of physical needs, comforts, and interpersonal relationships between family members and housemates can restrain this inventiveness. In the post-war West, hypothetical visions of tomorrow often took the forms of "space-age" novelties and fashions defined by emergent materials and technologies but circumscribed by the (classist) precept of the single-family home (Pantzar, 2000). From within a radically different system of mass housing, Soviet designers envisioned lifestyles replete with features that defied efforts to fit within the capitalist business model (Karpova, 2020). In the face of censorship, the stifling bureaucracy of the state-based design system, and manufacturers' disincentives to innovate, Soviet designers simply ignored questions of marketability. Curiosity, utopian social consciences, and a giddy eagerness to toy with Western faddisms, yielded designs unencumbered by profit motive or ideological convention. These factors made for highly abstract and often metaphorical projects. This paper locates Soviet futurological design within the larger contexts of post-war consumerism and domesticity, visualizing alternative forms of living in a suite of "paper" projects featured in Soviet periodicals from the 1970s and 80s, including the journals "Technical Aesthetics" and "Decorative Arts of the USSR." Soviet designers aspired to create interiors and domestic consumer products that would not only be functional, subservient tool in organizing chaotic daily chores and routines, but bring meaning and elevate mundane activities by emphasizing the forms of objects to the end of brightening daily routines, making domestic environments more artistic, cultivating taste, and ultimately celebrating individuality and creativity as the most beautiful aspects of humanity.

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## Scholarship of Design Research | History & Theory | Presentation

# **Public Interiority: Continuity and Formality**

Liz Teston, University of Tennessee, Knoxville

### ABSTRACT

While we frequently experience interiority inside structures, public interiority is a perceived condition found in the public sphere, without structure, and shaped by a combination of psychological, atmospheric, formal, and programmatic influences. This presentation describes conditions of formal public interiority discovered in Knoxville, Tennessee. These form-based interiorities intersect with the other aforementioned transient forms of public interiority. A bridge, coupled with a shadow and the midday sun creates an interior room. A low wall shields views to the street. Within mid-sized cities like downtown Knoxville, human-scaled, urban, topographic, and architectural forms often shape form-based public interiorities. The nature of the interior and our proximity to enclosing planes creates an impression of seclusion in the public realm. In some cases, the interior-feeling condition is temporary – like the screen of water at the fountains or the portable ice rink. In other cases the form-based interiority is delineated by architectural elements like overhangs, bridges, or courtyards. There is a continuity to interiority that supercedes the façade. This continuity can be shaped by surfaces, voids, or, as in the case of Rem Koolhaas' Junkspace: air conditioning. Junkspace tests the limits of the contemporary architectural condition. Form-based public interiorities occupy a kind of blurred threshold between interiority and exteriority. As Koolhaas writes, "Continuity is the essence of Junkspace; it exploits any invention that enables expansion...It is always interior, so extensive that you rarely perceive its limits...Air conditioning has launched the endless building. If architecture separates buildings, air conditioning unites them....Because it costs money...conditioned space inevitably becomes conditional space; sooner or later all conditional space turns into Junkspace...when we think about space, we have only looked at its containers. As if space itself is invisible, all theory for the production of space is based on an obsessive occupation with its opposite: substance and objects, i.e., architecture." So, if space is conditional, endless, and invisible, this opens up our conception of interiority and exteriority. If interior space can be

delineated by air conditioning alone, why not a bridge and a shadow? Or screen of water? Formbased interiorities are not merely loosely arranged surfaces. To experience an interior, we must perceive a spatial contrast. Beginning with Heidegger's tool analysis of a hammer, this presentation analyzes the extent to which forms can be eroded and still be considered a conditional interior. The interior volume is inherently objectless and traced by a contiguous surface condition. How much can we erode this contrast barrier and still have interior-feeling spaces? Are we experiencing interiority when on a city sidewalk, sitting under an overhang? Or when walking between a snow berm and a building façade? If interiority is, as Bruno Zevi wrote, "the phenomenon of moving about within" or a continuity of spaces, how do we define the formbased regions of interiority when they are not demarcated by a building envelope? Space requires a contrast barrier if understood as an internal condition. This contrast barrier need not be pure. It can be perforated or disintegrate, or spongy and irregular. We do not need a building façade to generate this form-based interiority. Contrast barriers and human perception together define interiority. It cannot reveal itself through object-actors alone. In other words, human perception draws connections between objects, materials, and space to create interior-feeling places. Through subjectivity, humans give interiority meaning. In this presentation diagrams and images will reveal these conditions to the reader. The primary purpose of presentation is to provide tangible examples to the participant, so they can go forth and discover public interiorities of their own.

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Previous page: Map of Downtown Knoxville's interior conditions in exterior spaces: entries, alleys, courtyards, low walls, awnings, and trees, etc. a feeling of interiority.

This page: Two pedestrian pathways intersect to create a courtyard node. The height of the adjacent buildings create

Next page: Covered exterior walkway with exposed structure creates a threshold sequence.





35°57'59.4"N 83°55'05.8"W





This page: Building shadows and tree coverage at a pocket park create interiors within interiors, despite the park being an exterior space.

Next page: Perforations in a building facade create a interior-exterior grey zone. Perception of the threshold as an interior or an exterior is contingent upon variable factors, like time and temperature.







#### 35°57'41.2"N 83°55'11.6"W









Previous page: A steep hill and adjacent buildings shape conditions of interiority.

This page: Building shadows and tree coverage at a pocket park create interiors within interiors, despite the park being an exterior space.



























































































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### ABSTRACT

COVID and the quarantine measures enacted in the interest of public health redefined our relationships with the spaces and functions of our homes. Dining tables became ad hoc workstations. Kitchens once used a few times a week now provided three meals per day. Guest spaces emptied to accommodate working and learning from home. In Istanbul and other urban cities where domestic space was already at a premium, finding innovative ways to utilize space became a necessity. This project follows the spatial practices in the most extreme case of indoor quarantine where residents were only outside of the home for necessities within mandated hours. This "lock-down" mode of quarantine required all working and learning to move from workplaces and schools into the home (Hurriyet Daily News, 2020). Lockdown also required that all socialization that would typically take place outside of the home also be moved to within. The innovative and creative ways users re-allocated and re-defined space within the tight confines of urban living environments highlights the importance of homes design and the impact of design on the daily lives of the people who live in them. Participants (n = 35) were selected from the Interior Architecture program at a large, state research university in Istanbul, Turkey. Student participants had at a minimum 2 years of design training including one year of foundational of architectural design training and one year or more of training specifically within interior architecture. Participants were asked to sketch their bedrooms and the spatial changes that occurred when lock-down was enacted. These sketches were to include the overall space, graphic representations of new routines, and annotations regarding the changes to the physical spaces that were made. Participants were also asked to reflect on the changes they saw in their bedrooms after lock-down. An inductive approach (Thomas, 2006) was used to analyze the data by first combining and summarizing the data, identifying patterns of spatial changes, and

applying these patterns to a framework for the lock-down scenario. The findings revealed that within these relatively small urban homes were communal spaces shared often with family, participants worked to incorporate their learning environments into their bedroom spaces, and participants remained physically and socially active despite the lock-down restrictions. As the pandemic endures, this research adds to a building body of knowledge about the lasting impacts of the pandemic on architecture (Chayka, 2020). Specifically focused on the domestic interior, this study focused on the changes that took place within domestic space when participants were confined in their homes. As the research demonstrated the Turkish home was viewed as a communal environment and it will be interesting to see if this communal mindset and the resulting maintenance of social interaction, even with the most extreme lock down measures, perhaps translates into better mental health outcomes (Masiero, et. al. 2020) as we emerge from the pandemic.

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### APPENDIX



#### After COVID-19

Balcony is one of the most popular space in the house now. Since the weather is great but we can not go out freely, we use our balcony to feel outside the house and get some fresh air&sun light.

#### How it's changed?

After Covid-19, we started creating new spaces at our balcony for new activities. The ones that we are mostly use is studying&home office space, sports space, outside breakfast &dinners space and movie theatre space.





#### Description

Before COVID-19, I was going to the fitness center to learn yoga however after this pandemic, since the virus spreads fast, it became forbidden to go to the sports centers. The importance of social distancing increased, and hygiene became more important in our daily life. Until this pandemic ends, everyone should continue doing their activites at home. While you are doing yoga in a crowded place you can feel the energy around you since everyone does the same movements At home we can continue doing yoga alone, however I choose to do it with other people since I can feel a different energy. After COVID-19, I made some spatial arrangements to do yoga without accidentally touching anything in my room and also I positioned my computer to make it easier to be seen while I am moving



APPENDIX



We started to spend more time in closed areas with Covid-19. We needed more space in our home. We have started to make the areas, which we have used less, more useful. For example, we started to change the position of our poufs and chairs in order to spend more time in front of the windows and balconies. This allowed us to make a connection with the outside. As a reflection of this, I needed some changes in my room.

APPENDIX



## APPENDIX



### After COVID-19

I saw that a bedroom could be more than a bed. A ' bed' is sometimes a cinema chair, sometimes a museum, sometimes a yoga room and lefor me, and these features have grown day by day.

#### How it's changed?

Designs are becoming more functional and areas become more useful. Space human interaction and the personalisation of space are increasing. Different uses of a space change the way we look around.



Scholarship of Design Research | History & Theory | Presentation

# Wayfinding and Stress: A Theoretical Analysis of the Stress Caused by Wayfinding Issues Based on the Salutogenic Model

Saman Jamshidi, University of Nevada, Las Vegas Seyedehnastaran Hashemi, Texas Tech University

## ABSTRACT

Aim: The aim of this study is to explore why wayfinding provokes stress from a theoretical perspective and also provide practical design strategies to reduce stress caused by wayfinding issues. Background: Wayfinding is a spatial problem-solving process that can be stressful especially under time constraints (e.g., emergency egress, airports, and hospitals). The stress experienced due to wayfinding can have two major consequences. First, it can result in further negative outcomes such as higher blood pressure, headache, and frustration. Second, stress can disrupt cognitive processes (such as information gathering and information processing) and hence makes the wayfinding process even more challenging. Although some situations during wayfinding can cause stress for some individuals, they may not be stressful for others. Accordingly, it seems that some individual and group differences exist that lead to the difference in the level of experienced stress. For example, finding one's gate in a complex airport can results in stress if the individual has limited physical or mental capabilities due to aging. However, a younger adult may find the same target easily and with no negative emotions. One factor that can explain the individual differences relates to the coping mechanism that each individual may use during wayfinding. In other words, while wayfinding can potentially be stress-inducive for all people, the capacity of people to cope with a stressful situation determines whether or not they feel stress. Accordingly, this study tries to address two questions: (1) why do people fail to cope with stress during wayfinding? and (2) how environmental design can empower people's coping mechanisms during wayfinding? Methods: The salutogenic model was adapted as the framework to address the research questions. According to the salutogenic model,

one feels stress if one's sense of coherence is jeopardized. This model proposes three factors that should be present to maintain the sense of coherence: (1) comprehensibility, (2) manageability, and (3) meaningfulness. This study used these three factors to explore their potential role in explaining stress caused during wayfinding. Findings: This study found that the salutogenic model can explain why and when users from different populations feel stress during wayfinding. Several wayfinding scenarios were provided to support the theoretical argument proposed in this study. Examples of design solutions are also provided with the aim of mitigating this issue. Conclusion: The findings of this study can enhance users' experience in interior environments by increasing their capability of coping with stressful situations during wayfinding, hence avoiding the other negative outcomes.

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### Scholarship of Design Research | Open Track | Presentation

## Professional Certification as an Introduction to Design Elements

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#### ABSTRACT

The focus of this presentation is how a lecture and an assignment that integrated WELL concepts into the design process inspired a student to become a WELL Accredited Professional (WELL-AP) while they were still a student. The lecture first introduced concepts of the International WELL Building Institute's (IWBI) WELL v1 to students in the undergraduate course Sustainability Design Strategies. Air, Water, Nourishment, Light, Fitness, Comfort, and Mind concepts were explained using visual examples of each. The assignment tasked students with applying as many of these features as possible to all phases of the design process for a current project from their studio class. Strategies from a selected green certification were also applied to the studio project. One student was particularly intrigued with both the process of applying WELL features and the focus of WELL on human health as it relates to the built environment. The student recognized that while there are various multiple green building certifications and practices, attention to human health and wellbeing was less of a focus. This is where the student felt that WELL would be a valuable certification to achieve. As a result, this student studied for the exam and earned the WELL-AP credential within months of completing their Sustainability class. The student noted that with people spending over 90% of their time indoors1 the task in front of them is to ensure that their future projects in school focus on improving the human experience in regards to health and well-being, and that this is carried forward into their professional practice. They also recognized that the knowledge gained from becoming a WELL-AP allows them to create more well-rounded projects that center on the design's impact on building occupants rather than attempting to only design for the space and specific tasks at hand. Gaining the knowledge associated with the certification increased the student's awareness of design elements that should be included within a space, as well as the impact wellness has had on their personal life. They are more cognizant of wellness personally, academically, and professionally. The student will show examples of integrating WELL concepts in several of their student projects.

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## WELL C13 Accessibility and Universal Design





Professional Certifications as an Introduction to Design Elements

## WELL M02 Access to Nature







Professional Certifications as an Introduction to Design Elements

## WELL A04 Construction Pollution Management



Scholarship of Design Research | Open Track | Presentation

## Spatial Factors Influencing Occupants' Window and Blind Use in Residential Buldings

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#### ABSTRACT

Buildings' energy performance depends on technical and human factors. Occupants' interaction with windows and blinds has a significant impact on buildings' energy demands (Haldi & Robinson, 2011). Occupants' behaviors to control their indoor environmental conditions are influenced by many contextual factors (O'Brien & Gunay, 2014). Until recently, occupant behavior was oversimplified when represented in building energy simulation tools and this resulted in the inaccurate predicted energy performance (Yan et al., 2017). This research aimed to examine the relationship between occupants' behaviors of operating windows and adjusting blinds and spatial factors such as floor levels, space types, and orientation. A questionnaire was constructed according to the Theory of Planned Behavior, which has been widely adopted to analyze environmental behaviors (D'Oca et al, 2017). The Theory of Planned Behavior demonstrated that attitude, subjective norm, and perceived behavioral control are determinants of a person's intentions and actions (Ajzen, 1985). Two surveys were administered to identify occupants' behaviors of operating windows and adjusting blinds during the summer and winter seasons. The population of this study was occupants of three multifamily residential buildings. Each building consists of four stories. The apartments are laid out so that half of them are facing north and the other half is facing south. Each apartment had at least one bedroom and living space. Using the stratified random sampling strategy, a total number of 104 and 101 responses were collected from the summer and winter surveys in 2019 with a response rate exceeding 50%. The independent-sample t-test results showed that occupants of the second, third, and fourth floors have a significantly positive attitude towards operating the window in the living area during summer (p=.013) and a significantly positive attitude towards adjusting the blinds in the

living area during winter (p=.041) compared to first floor occupants. The occupants of northoriented apartments have a significantly positive attitude and towards adjusting blinds in living (p=.002) and sleeping areas (p=.023) compared to occupants of south-oriented apartments during winter. Finally, the results of the paired sample t-test indicated that occupants' intention to operate windows in the living areas is significantly positive (p=.017) compared to their intention to operate windows in the sleeping areas during summer. In addition, a multiple regression analysis revealed that about 50% of the variance in occupants' behavioral intention to operate windows and adjust blinds in living and sleeping areas during summer and winter could be explained by their attitude, subjective norm, and perceived behavioral control toward performing these behaviors. Finally, a simple regression analysis revealed that about a 70% variance in occupants' behavior to operate windows and adjust blinds in living and sleeping areas during summer and winter could be explained by their behavioral intention toward performing these behaviors. In this research, occupants' behavior of operating windows and adjusting blinds were studied simultaneously to obtain a holistic understanding of the way occupants control their indoor environmental conditions in summer and winter. The results of this study indicated that spatial factors such as floor levels, space types, and orientation would significantly influence the way occupants to operate windows and adjust blinds in residential buildings. This study confirmed that the constructs of the Theory of Planned Behavior can be used to predict occupants' window and blind use in residential buildings. Results from this study can be incorporated into building energy simulation software to guide energy-related interior design decisions early in the design process to improve a residential buildings' energy performance.

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# Insights into Spaces for Creative Behaviors Through a Literature Review

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### ABSTRACT

The need for greater creativity has widely been discussed. Universities attempt to nurture student's creative confidence inside and outside the classrooms. Organizations transform their corporate culture to support the innovative performance of employees. Although numerous research approaches to igniting creative potential reported social dimensions, studies have developed evidence of how the physical environment supports or hinders creative behaviors (Lee, 2016; McCoy & Evans, 2002; Wanqing et al., 2020). It is important to note that multifaceted creativity allowed these studies to focus on a particular aspect, which may not universally apply to creative behaviors or performance. In this regard, the current study aims to address spatial types and characteristics of the physical environments for different creative activities. Through a systematic literature review, influential types and features of the physical environment on diverse aspects of creative behaviors are explored. As a first step, the authors conducted a keyword search using three online databases: Education Resources Information Center, Web of Science, and Scopus, in April of 2021. The search keywords were created to simultaneously look for information on creativity and the physical environment. Among the initial search results (n = 962), duplicate studies or articles not written in English were excluded (n = 659). Then, the intensive abstract reviews (n = 101) and full-text reviews (n = 40) allowed to determine the following criteria: empirical methods, detailed information on the physical environments and creativity, and adult participants. Finally, 15 studies were added from search of forward and backward citation and highly relevant journals (n = 55). As study characteristics, the majority of 55 articles were done: (1) around the year 2020; (2) within Management area; (3) in the United States; (4) through surveys and interviews as data collection methods; (5) with more than 100 participants; (6) from work settings. Through VOSviewer, to visually analyze the

network of cited keywords in the studies, top-ranked keywords appeared in three clusters: organizational creativity, innovative spaces, and workspace design. The keyword groups indicated that the selected studies' focus was mainly on enhancing innovative performance as the corporate culture in relation to the environmental design of workspaces. Moreover, the current study synthesized the variables that significantly appeared in the selected articles. As independent variables, both types and qualities of physical environments impacted creativity. Regarding creativity as dependent variables, the studies mainly observed the improved selfefficacy in generating innovative ideas and solving problems creatively at work. As a whole, the following environmental attributes for supporting creative behaviors are proposed: (1) a balanced space planning that provides time for reflection and incubation at both individual and group levels; (2) collision spaces that encourage informal communication and casual knowledge exchanges; (3) maker spaces that inspire new professional opportunities; (4) connection to natural aspects through plants or windows to outside; and (5) multi-sensory design considerations such as adequate lighting, optimistic indoor air quality, positive odors, and controlled sound. This review offers several interior design cues for creative behaviors that designers can holistically apply to various environment settings. Educators would also benefit from the implications in this study providing directions to future creators who could elevate the qualities of interior design. The current overview of research evidence calls for more research to investigate design attributes for creativity in other areas than workspaces, such as learning and healthcare environments. Further studies could also focus on the role of specific spatial types and features suggested in this study to improve creative self-efficacy.

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Scholarship of Design Research | Open Track | Presentation

# The Building that Teaches: Designing Augmented Reality Technology for Assessing Building Design Strategies

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#### ABSTRACT

Efforts to enhance the experience of interiors have led to experimentation with augmented reality (AR) technology to encourage users to participate in their interior environments using their mobile devices. Immersive interiors such as museums have used phone-based AR technology to invite visitors to unlock digital overlays of experience on the physical environment. Composed of a real-time overlay on the physical environment, AR technology sets itself apart with its placebased interaction with physical environments (Liao & Humphreys, 2015). Post-occupancy evaluations (POEs) have long been used to assess building performance (Shepley, 2011). Less explored has been the role of AR technology in assessing building design strategies and enhancing the user experience. We propose that AR has potential to expand the goals of postoccupancy evaluations, beyond improved evaluation to enhancement, by allowing the building to teach occupants about resources and nudge occupants to utilize spatial features designed to enhance wellness. After designing the app (Author 01), this study examines the technological affordances of AR in building analysis and user experience of interior environments through the design of a mobile-AR POE experience in a LEED-Gold academic incubator building. To investigate the role of AR technology in assessing building design strategies and enhancing the user experience, this study draws on two sources of data for analysis including: 1) occupant feedback from the use of mobile AR POE experience and 2) in-depth interviews with occupants. Ten building occupants used the mobile AR POE experience and gave feedback on the experience via a think-aloud protocol. After using the mobile AR app, each of the ten building occupants participated in an in-depth qualitative interview about the experience. Both sources

were analyzed to identify key aspects of designing AR technology for assessing building design strategies. The emerging findings from the AR mobile experience think-aloud protocol and the in-depth interviews indicate the role of technological affordances of AR in assessing building strategies and enhancing the user's experience of the interior design. Building on Gibson's theory of affordances in the built environment (1982; 2015), Gaver (1991) introduces the role of technology affordances as a tool for human-centered analysis of technologies. The think-aloud and interviews revealed that contextually-situated POE questions & the real-time overlay of information on the physical environment afforded by the AR mobile experience helped participants more deeply reflect on their building use and the specificity of feedback they could give about the building. The interviews about the AR experience revealed participants' evolving perceptions about spatial design features of the building. Occupants described how the AR experience impacted their awareness of features for health/ wellness as well as how they might utilize specific building features in the future. AR as a Contextually-Situated POE Methodology: This study suggests that AR can expand the goals of the POE to engage users with contextual building feedback and educate occupants about resource opportunities within a facility in real-time. This AR application can move POE processes beyond evaluation to engagement and education about the design intention of specific building features related to building rating systems. Participants' feedback about the AR-app centered on how digital experiences were integrated with physical spatial features and how that impacted the way they interacted with the interior environment. As immersive interior environments are becoming more dependent on a convergence of digital and physical experiences, this study identifies strategies for examining and designing interior environments across the digital-physical continuum. This research has implications for design education and guiding principles for designing connected environments.

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Scholarship of Design Research | Open Track | Presentation

## Interior Environmental Qualities to Improve the Blood Donors' Experience and Health

Minyoung Cerruti, Washington State University Vahid Vahdat, Washington State University

#### ABSTRACT

Blood donation experience is essential to maintain adequate blood supply for medical treatments of over 1.8 million people diagnosed with cancer and 20 million people injured annually due to natural disasters (American Red Cross, 2017). Unfortunately, fewer than 5% of Americans who are eligible to donate have donated blood. This shortage of blood supply has reached a critical point during the COVID pandemic as 29% of America's blood centers have less than a single day of supply to meet the requirements. The larger cause for public disinterest in donation and thus the insufficiency of blood supply is, as the literature confirms, the stress and pain involved in the experience. Unfortunately, strategies for managing stress and pain among blood donors have been limited to behavior management and cognitive interventions that mainly focus on needles (France & France, 2018). This approach, as the data shows, has fallen well short of allaying anxiety for many potential donors. In addition, there is scarcity of transfusion research with specific regard to the physical environment despite the health benefits of the quality of the physical environment in the well-established healthcare literature (Ulrich et al., 2008). But while integrating users' experiences into patient-centered care shows relative growth; healthcare research has not yet included the views of blood donors in association with the physical environment. More research is therefore clearly needed when it comes to assessing environmental factors and blood donors' health in blood donation settings. This study investigated impacts of what the literature identifies as optimal interior design features (i.e., control, comfort, distraction) on blood donors' stress and motivation to donate blood. Our central hypothesis was that blood donors will have lower stress and higher motivation in a blood donation setting with the combination of control, comfort, and distraction, as compared to settings with only one or two of these environmental features. Using virtually constructed 360

environments, quantitative and qualitative data were collected from a random sample of 400 college students (age range from 18 to 24 years). Participants were asked through our online survey about the significance of the physical environment of blood donation sites in terms of their overall experience, stress, and motivation on a 5-point Likert scale from "not significant" to "very significant." In a design intervention assessment, the influence of interior environmental qualities was tested by assessing the emotional state of participants at the present moment in eight virtually simulated settings of blood donation bus interior (see Figure 1). Participants' feelings were measured using the Zuckerman Inventory of Personal Reactions self-report (Zuckerman, 1977) in terms of five emotional factors (i.e., fear, positive affect, anger, interest, and sadness). Findings showed that participants preferred the blood drive bus with design features of control, comfort, and distraction together to other seven settings (see Figure 2). Duncan post-hoc tests also confirmed that the most preferred setting evoked the feelings of positive affect (F=2.912, p-value=0.034) and attentiveness/interest (F=4.603, p-value=0.004), especially first-time donors and regular donors. 83.3% of participants initially believed that the blood donation environment had little or no effect on their stress and decision to donate blood. However, quite to our surprise, 89.3% of participants in their closer evaluation of changes made to the environment, indicated that they found the environment to be a critical factor in reliving their stress (t=-5.323, p-value=0.000) and motivating blood donation (t=-4.450, p-value=0.000). Put simply, this study suggests that blood donation settings with control, comfort, and positive distraction are optimal and desirable to improve blood donor experience, health, and motivation.

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#### Interior Environmental Qualities to Improve the Blood Donors' Experience and Health

#### Appendix:

Figure 1. Views of simulated blood drive bus interiors





#### Figure 2. Environmental preferences across four donor groups
### Scholarship of Design Research | Open Track | Presentation

# Identifying and Classifying Design Concepts in Interior Design

Natalie Badenduck, Mount Royal University

### ABSTRACT

Design concept – a notion central to the education and practice of designers - is one of the most confusing topics for students to grasp and something that educators struggle to teach, year after year, in programs around the world. In recognition of this problem, a mixed-method qualitative research study was undertaken in five cities and within seven international institutions (including: Ryerson University, Toronto; Fashion Institute of Technology and The New School, New York City; Royal College of Art and London Metropolitan University, London, UK; Berlin International University, Berlin, GER; and Glasgow School of Art, Glasgow, UK) between September 2019 and March 2020 to construct a comprehensive investigation of the topic. This presentation will outline findings from the study and provide responses to the posed research questions - how is design concept defined and perceived by interior designers? Individual perceptions of design concept are varied and complex. However, the thematic analysis of primary data collected as part of this study suggest there are two aspects that most clearly reflect personalized understandings of the topic. First, is how an individual defines design concept. Definitions range from person to person and the multitude of them reflect the broad and abstract nature of the term itself. The second, less obvious, aspect is that of identification - a component that reveals perceptions of design concept that are exposed through individual determinations of what actually qualifies as one. This presentation will describe how such determinations are often related to opinions about the necessary balance between practical and theoretical facets of a project. In Sentences on Conceptual Art, artist Sol Lewitt stated that "the concept and idea are different. The former implies a general direction while the latter is the component. Ideas implement the concept." (as cited in Harrison & Wood, 2003, p.837) The distinction Lewitt draws between the 'concept' and the 'idea' in this text acknowledges that creative works involve a mixing of ideas and the execution of them. This insight, which aligns with other literature and responses from research participants, served as a starting point for the creation of a framework with which to identify, examine, and potentially classify design concepts. This presentation will introduce an innovative yet accessible way of regarding 'levels of design concepts' that represent the proportion and relationship between 'conceptual thinking' and 'execution'. Each category organizes concepts according to the 'level' or depth of influence they have over project development. This framework integrates and embraces the fact that different types of interior design projects require varied levels of conceptual thinking. Ranging from Foundational (Level 1) to Speculative (Level 5), each category will describe the variation of programmatic responsiveness, precedent utilization, research integration, aesthetic influences, and expectations for creativity and innovation. The proposed levels of design concept are intended to provide a structure to foster a better understanding of the topic. Such a framework may serve as a valuable tool for interior design students and educators to more effectively communicate about project expectations and criteria for assessment. More generally, the research program and resultant categorizations are an attempt to provide greater clarity to how we, as educators, articulate and engage design concept in our teaching practices.

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## Scholarship of Design Research | Open Track | Presentation

# Super Local: The Role of Mapping in Site Analysis for Interior Design

Mohammad Suleiman, Virginia Commonwealth University, School of the Arts in Qatar

### ABSTRACT

How local is local? Saarinen provided a formula for always considering the next larger context in design. Super-Local takes a critical approach toward site analysis relative to the interior of any built environment. It researches the role Mapping can contribute to the initial phase of an interior design project. This was explored in a Junior class project to re-imagine the existing university library. This investigation focused solely on having a comprehensive analysis and research for the project site. Students explored tools and capacity of various digital & analogue channels to diagnose and map space (the site) through data-capturing procedures and analytics. This will allow for new readings of the space. The final outcomes were exhibited. Mapping: Different methods were explored through workshops and guest talks - such as data-capturing techniques, visualisation and image-editing – to produce various representational drawings and analytical diagrams, a process of revealing hidden dimensions in the built environment. The intent was to invent strategies for visualizing information that make new spatial interpretations possible. Mapping could be a major driver of the design process as well as a diagnostic way of understanding territories, revealing the social networks, conveying data and making conversations about the space or site. The information that mapping exposes for interpretation, whether it is geographic, analytical, performative, numerical or abstract, is core to the purpose of mapping. These tools provide insights into forces and phenomena that are temporal and/or invisible. The "site analysis" comprised of three major parts: Part A// Content Production // Image Making: Data-capturing + Data-visualization + Place-capturing Part B// Generative Tools, Methods, Processes, Techniques: Image Operations: (Image/Text/Object)-based workshops Part C// Tacit Making – Applied Expression: Image/Data Interpretation: A New Model Mapping and data visualisation expand the scope of architectural drawings and provide new methods for the

design and representation of form, forces, and data (information – intent). The presentation will go through the various phases, final outcomes, and exhibit for the project.

# Implementation of Smart Photochromic Glasses for Improving Occupants' Comforts in Buildings with Responsive Facades

Negar Heidari Matin, University of Oklahoma

## ABSTRACT

A responsive facade system is considered a major component of high-performance building envelope that is capable of responding to environmental stimuli and aims to improve occupants' comforts and energy consumption. The implemented technologies have provided a capability that facade systems can continuously change its own functions, features, or behavior over time in response to environmental stimuli, occupants' preferences and needs in order to improve facade thermal and visual performance. While the domain utilized technology in responsive façade systems is mechanical or electro-mechanical technologies, designers are exploring more efficient material-based technology which can replaced in design and development of responsive façade. This study proposed a hybrid technology integrated from implementation of both smart photochromic technology and electro-mechanical technology in design and development of responsive façade. To test the performance of proposed hybrid technology, an office room with a responsive facade was simulated parametrically through different design scenarios such as different facade orientations and four facade locations/climate zones. The result reveals the implementation of hybrid technology not only can increase occupants' comfort up to 35% but also it can improve building energy efficiency up to 17% in all possible scenarios.

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# Studio Integration: Mixing Design Disciplines and the Impacts of Co-Location

Lisa Tucker, Virginia Tech

## ABSTRACT

Problem: This research presents the findings of an effort to integrate four disciplines into a mixed studio environment. Many have argued that co-location will create opportunities for informal collaboration. This research explores whether the size and power differentials between disciplines allows for this mixed studio environment to work. What does it really mean to integrate disciplines in a studio environment? Context: Much has been written about the studio environment and its design juries and the conceptual framework of embodied power in the discipline of architecture (Dutton, 1987; Stevens, 2002; Anthony, 2012). Less is known about whether this educational model is effective for interior design education. The assumption of many design educators is that what works for architecture should work for interiors as evidence by the number of interior design programs who have a studio-based educational setting modeled on architecture. This work argues that there are some substantive differences between the two. Despite recent efforts, interior design is still a predominantly female major in North American. Further, Interior Designers know they are part of a team and not the sole creator of a building. Interior Design education requires that students work collaboratively as part of a larger whole which is in direct conflict to traditional models of architectural education that is a lone endeavor with periodic public reviews. Method/Position/approach: The research question posed by this study is what the impact of the embodied culture in architecture has on interior design students when the disciplines are mixed. A mixed methods approach was used and included surveys, behavioral observations and mapping, and focus group interviews. Surveys were administered at three points during each semester—the beginning, the mid-point and the end. Weekly observations and end of the semester focus groups were conducted. Survey questions included environmental questions (acoustics, temperature and lighting), demographic questions (major,

year and previous studio locations) and experiential questions about being in the studio environment. The context for this interior design program is in a department with three other majors. Three of the four disciplines are smaller in size than the dominant culture and numbers of the architecture program which outnumbers each other program 5 to 1 in terms of both faculty and students. Findings The outcome of three surveys, behavioral mapping and focus group interviews will be presented. The surveys were conducted with students at the beginning, middle and end of the first semester of mixing studios and disciplines. Behavioral mapping included basic measures such as attendance combined with how students dealt with large open studio environments by finding satellite areas to work. The focus groups allowed students to express their concerns in an open-ended format and to identify issues not otherwise represented in the survey responses. Conclusions/Argument: The results of this inquiry question whether the assumption that an architectural model is indeed appropriate for interior design education. Is the competitive atmosphere of solo pursuits really how interior designers will practice or should be taught? Does this historically white and male model provide an inclusive and collaborative environment that currently consists of a large percentage of females? What are other possible options might interior design education look to? This researcher argues that a new framework should acknowledge that interior designers work in a team and design as a part of a larger context. They are concerned with issues that impact people and not driven by aesthetics alone. A focus on health, wellness and a positive experience are essential to interiors. As design educators, we know this and yet many of us are still teaching in the same way we learned.

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# Feedback Accountability: Conversational Analysis of the Instructor-Student Interaction in Interior Design Studio

Hoa Vo, Georgia State University Abimbola Asojo, University of Minnesota

### ABSTRACT

Feedback, the fundamental tool in design education, enhances or impedes creativity depending on the information provided by the instructor and how students process this information (Gunday Gul & Afacan, 2018). Hence, both the instructor and students are accountable for the effectiveness/ineffectiveness of feedback. Attempts to optimize feedback practices in interior design, however, are inadequate. From 1982 to 2019, there were 24 articles in the Journal of Interior Design with brief discussions on feedback. Among those, only three offered empirical evidence (Pedersen & Burton, 2009). The researchers, thus, examined feedback in terms of the social interaction between the instructor and students in interior design studio at a land-grant University. Using Conversational Analysis (CA), the researchers answered the following questions: (1) What is the accountability of the instructor/student in feedback interaction? (2) How can the found accountability inform an optimal feedback practice? Data were collected from an interior design studio with a five-week light fixture design project in fall 2020 at a landgrant University. Due to the COVID-19 pandemic, class meetings were conducted on Zoom twice a week with 6 hours total. The educators recorded 30 hours of Zoom meetings to analyze using CA or in-depth interpretations regarding verbal and non-verbal behaviors (Melander, 2012; Mondada, 2014) of the instructor and students during feedback practices. Analysis results included coded transcripts with annotated screenshots from the recordings. The educators also had the design stages (i.e., ten hand sketches, three low-fidelity models, and one to-scale final light fixture prototype) of 20 students rated for creativity with two independent judges using the Creative Product Semantic Scale or CPSS (Besemer, 2006). CPSS ratings (i.e., students'

creativity) were the averages of fifteen Likert items (7-point scale) under three criteria: Novelty (i.e., newness), Resolution (i.e., appropriateness), and Style (i.e., appearance) between the two judges. Paired t-tests were conducted for CPSS ratings from 10 hand sketches to three lowfidelity models and three low-fidelity models to one to-scale final prototype. Significant differences in CPSS ratings between design stages indicated whether creativity changed with the accountability of the instructor/student in feedback interaction. The researchers will present CA results from a selected 1.5-hour excerpt of the Zoom recordings, including prominent feedback interactions. Through the CA lens, three characteristics of a typical feedback interaction emerged: 1. The instructor initiated and ended the feedback interaction. 2. The interaction was binary, as shown in multiple overlaps and continuous conversations between the instructor and students. 3. The instructor dominated the interaction, as indicated via the length of utterances. The students, however, determined if the interaction counted as a feedback interaction, as confirmed via the next-turn proof procedure. In other words, via verbal and nonverbal cues, students confirmed the information provided by the instructor as feedback and showed the intention to apply it to their design stages. Students who confirmed and applied the instructor's feedback had the highest CPSS ratings. Moreover, paired t-tests of CPSS ratings showed that Novelty significantly increased: ten hand sketches to three low-fidelity models (t(19) = 2.61, p =0.02) and three low-fidelity models to one to-scale final prototype (t(19) = 4.97, p < 0.001). Overall, results from CA and paired t-tests reinforced the binary nature of accountability in feedback interaction. However, multiple factors can influence the accountability of feedback, such as task nature (easy vs. complex), studio-level (novice vs. advance), and the personalities of both instructors and students. Follow-up studies are needed to identify an optimal feedback practice to enhance students' creativity.

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FY: faculty, Δ(hand gesture), α(eye movement), □(head movement)
ST: student, †(hand gesture), ≈(eye movement), ◦(head movement)
EPSY8114:Task.Level.Feedback:1:44:59.47:49

| 01 | FY: | >No, no< don't stop sharing=                                      |
|----|-----|---|
| 02 | ST: | =†Oh, oops, oops(.)[Sorry]f                                       |
| 03 |     | <pre>†left hand on chin&gt; 1.5</pre>                             |
| 04 | FY: | [I wanted] to talk a  |
| 05 |     | little bit about your model since <you're< td=""></you're<>       |
| 06 |     | you're> showing it (.) >You know< and for                         |
| 07 |     | everyone in the group tomorrow we'll have                         |
| 08 |     | $\alpha$ uhm: $\alpha$ ( .) from the shop shows us                |
| 09 |     | $\alpha raised$ eyebrows, look to the ceiling $\alpha$            |
| 10 |     | Fusion. and then >I have< $\alpha$ some: uhm: $\alpha$ (.)        |
| 11 |     | araising eyebrows,  |
| 12 |     | looking to the ceiling $\alpha$                                   |
| 13 |     | I like to call them summary $\alpha$ uhm: $\alpha$ (.)            |
| 14 |     | αraising  |
| 15 |     | eyebrows, looking to the ceiling $\alpha$                         |
| 16 |     | <b>∆like tips</b> ∆ ∆maybe; I'll post'it∆                         |
| 17 |     | $\Delta$ waving fingers $\Delta$ $\Delta$ pointing fingers to the |
| 18 |     | screen∆   |
| 19 |     | <pre>∆to: (now) I'll post'it &gt;after class&lt; so:</pre>        |
| 20 |     | people can see the menu bar $\Delta$ and different                |
| 21 |     | things in Fusion.   |
| 22 |     | $\Delta$ waving fingers, pointing fingers to the                  |
| 23 |     | screen>1.26   |
| 24 |     | The reason I made you leave it back up again                      |
| 25 |     | uhm: (.) cause when you look <u>at</u> your                       |

| 26 | form. I think having (.) How can I: let's me                         |
|----|--|
| 27 | see (.) I'm gonna anno <u>tate</u> (.) <u>I</u> th <u>i</u> nk maybe |
| 28 | for your lamp, 🛛 or:: >whatever<🗆 you build                          |
| 29 | □shaking head□   |
| 20 |  |

multiple (.) maybe the way to go=

31



| 32 | ST: | <pre>†=Oh yah there' there'll be more† (.)</pre>       |
|----|-----|--|
| 33 |     | <pre>†left hand on chin†</pre>                         |
| 34 |     | I haven't finish it yet=                               |
| 35 | FY: | =Ok: you haven't [finish] yah::= [yah ]                |
| 36 | ST: | <pre>[yah ] = cause [uhm:]</pre>                       |
| 37 |     | <pre>†left hand on chin†</pre>                         |
| 38 |     | the thing about mine (.) the thing about               |
| 39 |     | mine <b>†</b> [ah:: ] lamp, (.) let's see, (0.2)=      |
| 40 |     | <pre>†left hand on chin&gt;1.41</pre>                  |
| 41 | FY: | =[uh huh.] uh huh. =                                   |
| 42 |     | □ <u>a</u> nd you kn <u>o</u> w what you might explore |

| 43 |     | □shaking head>1.44   |
|----|-----|--|
| 44 |     | > <u>alth</u> ough< you might not be able to show          |
| 45 |     | this in uhm: † <u>Do</u> you know? α <u>oh</u> oh, it made |
| 46 |     | <pre>†left hand on chin&gt;1.52</pre>                      |
| 47 |     | $\alpha$ look to the                                       |
| 48 |     | ceiling>1.49   |
| 49 |     | out of plywood. r <u>i</u> ght. if we using oplywoodo      |
| 50 |     | Aif we're not using plywood; $\triangle$ even this form    |
| 51 |     | $\Delta$ pointing fingers to the screen $\Delta$           |
| 52 |     | themselves. could light up.=                               |
| 53 | ST: | =yah; so what it   |
| 54 |     | gonna be like is: (.)so: [these::]                         |
| 55 |     | are(0.2)   |
|    |     |  |

| 56 | FY: |  | [uh     | huh. | ]     |     |
|----|-----|--|---------|------|-------|-----|
| 57 | ST: | $\approx$ th <u>es</u> e are [cables?] $\approx$ | they're | not  | stiff | (.) |
| 58 |     | ≈raising eyebrows≈                               |         |      |       |     |

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Changes in mean scores for Novelty  $(M_N)$  between design process stages

Scholarship of Design Research | Pedagogy | Presentation

# Changing Perceptions of Design Students in Interdisciplinary Healthcare Design Studio

Daejin Kim, Iowa State University Cameron Campbell, Iowa State University Jihyun Song, Drexel University

## ABSTRACT

According to professional standards from the Council for Interior Design Accreditation (2020), they emphasize the value of collaboration in interdisciplinary teams. Interior designers should be able to work in teams and recognize the importance of integrated design practices. Given that interior designers frequently work with different disciplines in real-life projects, it must be essential for students to participate in interdisciplinary collaboration in a design studio (Dickinson et al., 2007). This opportunity encourages students to improve their perspectives and self-confidence and develop effective communication skills between the different disciplines (Makki, Farooq, & Alaskar, 2019). This research aims to explore perceptions of design students about other disciplines and describe how their perceptions were changed through an interdisciplinary healthcare design studio. This research conducted a survey in the first and last weeks of each Spring semester from 2019 to 2021 after gaining approval from the Institutional Review Board. The survey was administered using Qualtrics Survey Software, and the results were analyzed using the IBM SPSS Statistics (Version 28). The total number of survey participants is 60 students in three years, and there are three disciplines, including architecture (n=24), interior design (n=22), and landscape architecture (n=14). More than 30% (n=20) of participants were international students and 40% (n=24) were male. Fifty undergraduate students and ten graduate students participated in this survey. The first question is about the perception of students from other disciplines with a specific major. Students were required to rate the extent to which they agreed with each statement. Each question was rated on a 5-point Likert scale (1=Not at all True, 5=Entirely True). As an open-ended question, students describe their perception of other disciplines. For example, they were required to fill in the blanks: Architecture students

have a good skill and they are sensitive to . To test reliability of this survey, the Cronbach's alpha was reviewed, and the internal consistency was high (Cronbach alpha Pretest: .856 and Post-test: .854). As shown in Appendix 1, the result of a paired-samples t-test indicated statistically higher mean scores for students' perceptions after an interdisciplinary healthcare design studio. Specifically, students from architecture and interior design received higher mean scores about working with others, and all students were also significantly perceived as they treated their teammates with respect. Regarding leadership and follower, architecture students were considered good leaders, while students from interior design and landscape architecture were perceived as good followers. The result of open-ended questions showed that interior design students were good at rendering, modeling, space planning, and human-centered design. They were more sensitive to color, lighting, materials, and furniture. Common keywords of architecture students include leadership, modeling, and concept development as their specialty, and they are perceived as sensitive to spatial relationships, culture, aesthetics, structure, and materials. Landscape architecture students were considered good at sketching, visualizing, and programming and were sensitive to circulation, views, sustainability, and ecology. The result of this research showed different perceptions of students from other disciplines and examined perception change through an interdisciplinary healthcare design studio in three years. The conference presentation will provide empirical data about their perceptions, which will be an excellent opportunity to discuss how students can be prepared to maximize their effectiveness in leadership roles or as contributing team members in an interdisciplinary design studio.

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Appendix I. Mean differences of perception of students from other disciplines

|   | Pre  |       | Post |       |        |       |
|---|------|-------|------|-------|--------|-------|
|   | М    | S.D   | М    | S.D   | t      | р     |
| Working with others   |      |       |      |       |        |       |
| Architecture students are good at working with others.  | 3.45 | 0.872 | 4.07 | 1.087 | -3.703 | 0.000 |
| Interior Design students are good at working with others.   | 3.75 | 0.773 | 4.22 | 0.993 | -3.049 | 0.003 |
| Landscape architecture students are good at working with others.                                    | 3.75 | 0.773 | 4.02 | 0.911 | -1.848 | 0.070 |
| Respect   |      |       |      |       |        |       |
| Architecture students will treat you well with respect.   | 3.63 | 0.991 | 4.18 | 1.066 | -2.929 | 0.005 |
| Interior Design students will treat you well with respect.  | 3.93 | 0.821 | 4.4  | 0.995 | -2.912 | 0.005 |
| Landscape architecture students will treat you well with respect.                                   | 4.03 | 0.758 | 4.38 | 0.761 | -2.743 | 0.008 |
| Leadership  |      |       |      |       |        |       |
| Architecture students can lead the project from small to large scale.                               | 4.03 | 0.843 | 4.52 | 0.833 | -3.321 | 0.002 |
| Interior design students can lead the project from small to large scale.                            | 3.82 | 0.854 | 3.45 | 1.048 | 2.41   | 0.019 |
| Landscape architecture students can lead the project from small to large scale.                     | 3.85 | 0.88  | 3.7  | 0.908 | 0.903  | 0.370 |
| Follower  |      |       |      |       |        |       |
| Architecture students works well as part of the team or follower rather being the leader.           | 3.07 | 0.989 | 3.42 | 1.239 | -1.75  | 0.085 |
| Interior design students works well as part of the team or follower rather being the leader.        | 3.62 | 0.104 | 4.22 | 0.109 | -3.563 | 0.000 |
| Landscape architecture students works well as part of the team or follower rather being the leader. | 3.67 | 0.774 | 4.23 | 0.647 | -4.326 | 0.000 |

# The Influence of the Virtual Body on Cognitive Load in Virtual Reality Immersive Environments

Luis Mejia-Puig, University of Florida

## ABSTRACT

Over the past years, the use of Virtual Reality (VR) in interior design education has grown exponentially. From an interior design standpoint, VR is an effective medium to assess newly designed environments' formal, functional, and visual attributes. Moreover, VR allows designers to foresee their proposed solutions and helps stakeholders and investors comprehend planned spaces and acknowledge design decisions. Nonetheless, it is crucial to better understand how VR environments can affect the cognition of individuals interacting within them. Cognitive Load Theory (CLT) has its origins in the 1980s and since has explored how the cognitive architecture of the brain works. Two main types of memory compose cognitive architecture: long-term and short-term memory. The former has unlimited capacity and is where knowledge is stored and categorized in the form of schemas. These schemas vary in complexity and are referred to as previous knowledge supporting the cognitive processes. Whereas, working memory can only process a limited amount of information at a given time, and it is mainly task-driven (Paas, Renkl, & Sweller, 2003; Sweller, Van Merrienboer & Paas, 1998). The demand a given task enforces over the working memory is defined as Cognitive Load (CL). CL is a combination of learner characteristics and task features (Sweller, Van Merrienboer & Paas, 1998; Sweller, 2010). Besides, CL is composed of three dimensions: intrinsic, extraneous, and germane. Intrinsic CL directly connects with the task at hand (level of difficulty), while extraneous relates to external elements that may affect that task and not contribute to learning. On the other hand, Germane CL focuses on building schemas (learning) that will be later stored in the long-term memory. These three types of CL are additive and restricted by the capacity of the working memory. Nonetheless, capacity can be re-allocated, meaning that reducing extraneous CL can increase intrinsic and germane CL capacity. When engaging in VR environments, how

individuals perceive themselves can increase extraneous CL, hindering performance on the required task. In VR, the virtual body (VB) of individuals is embodied through avatars. These avatars and can be divided into online and offline representations (Carruthers, 2008). The former is when individuals can see their VB within the environment, while the latter they do not but feel they are present. This study explored three conditions of VB and assessed their impact on CL. Two states used online and offline VBs, both from a first-person point-of-view. A third condition also used an online VB but from a third-person viewpoint. A sample of 72 participants engaged on average for 20 minutes in VR where they completed a spatial arrangement task. CL was measured through a NASA-TLX questionnaire and a functional near-infrared spectroscopy (fNIR) device attached to the participant's scalp. The fNIR recorded oxygenation changes in the blood that accounted for CL. Findings evidenced statistically significant differences between the three conditions of VB. While some conditions helped individuals feel more immersed in VR, they also increased CL, negatively affecting task performance. Also, psychophysiological data from the fNIR device evidenced how CL changed over time while the VR interaction. This is impossible to observe using only self-report instruments to assess CL, such as the NASA-TLX questionnaire. Finally, this study contributes empirical evidence for design practice by helping designers select the appropriate VB to use depending on the VR interaction intents.

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# Teaching Inclusive Design: A Case Study of a College Level Course in an Interior Design Curriculum

Julie Irish, Iowa State University

### ABSTRACT

In a world where inclusion and Universal Design (UD) are ideals to strive for, how can interior design faculty provide practical instruction to students to create inclusive designs, especially that go beyond the minimum ADA requirements? This paper describes an optional college level course for senior/graduate level students in a CIDA accredited interior design program focused on inclusive environments. A difficulty setting up a new course on this topic was that, although there are programs that specialize in UD, there are scant published curricula resources available to support educators. This paper aims to share strategies and examples for educators interested in teaching a similar class. Ideas were utilized from, e.g., Center for Excellence in UD (n.d.), Christophersen (2002), Cook & Fleck (2017), and Ringaert (2002). The course aims were to introduce students to the concepts of inclusive environments, provide students a background in accessibility legislation, give students tools to critically examine current accessibility codes and standards, and increase students' understanding and sensitivity to the needs of all users of the built environment. The theoretical pedagogy underpinning the course was Universal Design for Learning (UDL). UDL aims to provide multiple engagement and learning tools to support learner preferences (CAST, 2018). This was achieved by, e.g., creating a variety of assignments including visual, technical, and written to support individual student's strengths, and providing free open educational resources (OERs) instead of a required textbook to maintain affordability. The semester-long class met twice a week for 1<sup>1</sup>/<sub>4</sub> hours with a maximum enrolment of 18 students. The usual format was a lecture followed by an active learning exercise to engage students and support what had been discussed in lecture. The course began with an introduction to inclusive environments covering statistics, consideration of multiple users to design for, and

the legislative background. Other topics included strategies for designing inclusive environments, communications, inclusivity in educational environments, and accessible housing. Assignments included a treasure hunt to find examples of poor accessibility in public buildings. Students were required to describe why they were poor and what could be done to improve accessibility. A major assignment was a group project to conduct an access audit. Students were instructed in the use of access audit equipment and provided examples of professional audits as a template. Although students used published ADA checklist criteria to conduct the audit, they were also required to report barriers to accessibility beyond the scope of the ADA and state how improvements could be made, e.g., to support individuals with intellectual disability or mental ill health. Students reported their findings to facilities management personnel. The final weeks were spent applying knowledge about inclusive environments to a real-world design problem. Typically, this was a housing project, e.g., residential design for individuals with autism or HIV/AIDS. A field trip (in-person or online during the pandemic) supported the learning outcomes. At the end of the semester, students submitted a final reflection paper highlighting the three main things they had learned from the course and how they could apply them in practice. Students' comments revealed an interest in the range of topics taught but highlights were the access audit and final project. Comments included, "This course has really shown me how easy it is to involve as many people in a space as possible and how much a universal space can impact others," and, "I find myself becoming a much more conscious and aware designer," and, "I can genuinely look at the world through a different lens, considering the many ways in which individuals experience inequality." This case study provides a framework for other educators interested in teaching inclusive design.

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## SCHEDULE

| Week 1 | In class                                       | Readings                                      |
|--------|--|---|
| Day 1  | Introduction to the course, syllabus, and      |   |
|        | schedule; assignments; terminology;            |   |
|        | theories and models of disability; statistics. |   |
| Day 2  | Introduction to Inclusive Environments         | Persson, H., Åhman, H., Yngling, A. A., &     |
|        | Introduce Treasure Hunt assignment             | Gulliksen, J. (2015).                         |
|        | Exercise: Examples of discrimination           |   |
| Week 2 | In class                                       | Readings                                      |
| Day 1  | Lecture: Legislative Framework                 | Evans, G. W. (2003).                          |
|        | Exercise: Case Studies on Discrimination       |   |
| Day 2  | Lecture: Accessible Design Standards           | Salmen, J. P. (2001).                         |
|        | Exercise: Beyond the ADA standards             |   |
| Week 3 | In class                                       | Readings                                      |
| Day 1  | Lecture: Introduction to Access Audits         | Ormerod, M. (2005).                           |
|        | Introduce Access Audit assignment              |   |
|        | Exercise: Access review of campus building     |   |
| Day 2  | Meet on site to work on Access Audit           | Gissen, D. (June, 15, 2018).                  |
|        | Exercise: Access Audit (class overview)        |   |
| Week 4 | In class                                       | Readings                                      |
| Day 1  | Meet on site to work on Access Audit           | Hadjiyanni, T., & Helle, K. (2009).           |
| Day 2  | Guest Lecture: Equity and Inclusion            | Abrams, A. (July 6/13, 2020).                 |
| Week 5 | In class                                       | Readings                                      |
| Day 1  | Lecture: Designing Inclusive Environments      | Sherman, J., & Sherman, S. (2013).            |
|        | Exercise: Designing for others                 |   |
| Day 2  | Lecture: Communications                        | Effective Communication. (2014).              |
|        | Submit Treasure Hunt assignment                |   |
|        | Exercise: Communications access review         |   |
| Week 6 | In class                                       | Readings                                      |
| Day 1  | Lecture: Colors, Materials & Wayfinding        | Bright, K. & Egger, V. (2008).                |
|        | Exercise: Color LRV                            |   |
| Day 2  | Guest lecturer: Housing Accessibility          | W. C. Sullivan & CY. Chang (2011).            |
|        | Reviewer                                       |   |
| Week 7 | In class                                       | Readings                                      |
| Day 1  | Lecture: Inclusivity in Educational            | Harper, S. R., Patton, L. D., & Wooden, O. S. |
|        | Environments                                   | (2009).                                       |
| Day 2  | Present Access Audit assignment                |   |

| Week 8  |  |   |
|---------|--|---|
| Day 1   | No class attend a Disability Awareness | Lustig, D. C., & Strauser, D. R. (2007).          |
|         | Week Event                             |   |
| Day 2   | Lecture: Housing                       | Matthews, C., Hill, C., & Frederiksen, D. (2017). |
| Week 9  | In class                               | Readings  |
| Day 1   | Virtual Field Trip                     |   |
| Day 2   | Programming and Research               |   |
| Week 10 | In class                               | Readings  |
| Day 1   | Programming and Research               |   |
| Day 2   | Concept and Brand Identity             |   |
| Week 11 | In class                               | Readings  |
| Day 1   | Concept and Brand Identity             |   |
| Day 2   | Present Concept and Brand Identity     |   |
|         | Develop floor plans                    |   |
| Week 12 | In class                               | Readings  |
| Day 1   | Develop floor plans                    |   |
| Day 2   | Develop floor plans                    |   |
| Week 13 | In class                               | Readings  |
| Day 1   | Develop color scheme, materials, FFE,  |   |
|         | wayfinding strategy                    |   |
| Day 2   | Develop color scheme, materials, FFE,  |   |
|         | wayfinding strategy                    |   |
| Week 14 | In class                               | Readings  |
| Day 1   | Develop perspectives/renderings        |   |
| Day 2   | Develop perspectives/renderings        |   |
| Week 15 |  | Readings  |
| Day 1   | Finalize presentation                  |   |
| Day 2   | Present Group Project                  |   |
|         | Submit Final Reflection Paper          |   |

#### **TREASURE HUNT ASSIGNMENT** Individual – 25 points

**Due date:** 

### **Objective:**

Identify poor examples of accessible design in the built environment and the users who are adversely affected. Consider how poor design examples could be improved.

### **Description:**

- Photograph 5 examples of poor accessible design that you come across in daily life in the built environment. Try to find examples off campus but you may also use some on campus examples. They should be public or commercial buildings rather than residential buildings. Examples may include but are not limited to the external environment, the interior environment, transport, or communication.
- 2) Label each photo with a number and location.
- 3) Describe why you think each design is poor and what group or groups of people the design particularly adversely effects, (e.g., someone with mobility difficulty, vision loss, mental ill health, etc.).
- 4) Describe what could be done to make the design more accessible.
- 5) This is a visual exercise, copy your images into a document and bullet point or write sentences under each image.

Please upload as a pdf document to the course Canvas site before class on the due date. File title should be studentlastname\_treasure.

### **EVALUATION CRITERIA**

- Photographs were clear, good quality, and clearly labelled
- 5 accessible design issues were clearly described
- Users who were adversely affected were described
- Suggestions for improving the design were made
- Good variety of examples were illustrated

### ACCESS AUDIT ASSIGNMENT

In teams - 60 points

Due date:

### **Objectives:**

Learn how to conduct an access audit and report the findings. Critically examine current access codes and standards.

### **Description:**

- 1) Conduct an access audit on a part of a building that you have been assigned.
- 2) Use a set of design criteria to conduct the audit.
- 3) Create a minimum of 3 additional criteria that go "above and beyond" or outside the scope of the ADA Standards. Cite your sources.
- 4) Use measurement instruments to record data.
- 5) Use photographic evidence to support your findings.
- 6) Compile your findings into a slide presentation of items that you found that did not meet ADA standards. Include <u>dimensions</u> and <u>photographs</u> to explain your findings.
- 7) Include 3 additional items that go above and beyond the scope of the ADA Standards for the client to consider.
- 8) Include proposals on how to achieve accessibility.
- 9) Prepare a priorities list of works recommended to be done.
- 10) Provide a broad cost parameter of works recommended to be done.
- 11) Include criteria reference sources, e.g., ADA Standards for Accessible Design 2010.
- 12) Highlight some positive items that you found so the client does not think everything is negative.
- 13) Provide a final slide summarizing the main recommendations.
- 14) The presentation should be uploaded to the course Canvas site by the due date. File format should be: studentlastname\_studentlastname\_ studentlastname\_audit. Only one team member needs to submit.
- 15) Each group will have an agreed time to present with time for questions afterwards.

### **EVALUATION CRITERIA**

- Data was accurately recorded against set criteria.
- At least 3 additional criteria that went "above and beyond" or outside the scope of the ADA Standards access requirements were included. Sources were cited.
- Measurements were included.
- Photographs were clear and represented the area audited.
- Proposals included how to achieve increased accessibility.
- Report included a priorities list of work.
- Report included some broad cost parameters of the work recommended to be done.
- A summary of the main recommendations was included.
- Slide presentation was clear and well explained to the client in visual and verbal format. All team members participated.

#### **GROUP PROJECT – Homes for Individuals with HIV/AIDS**

#### In teams - 70 points Due date:

#### **Objectives**

In this assignment, you will apply the skills you have learned in the first part of the semester and implement them in this project. Although you are designing for individuals with HIV/AIDS, consider that individuals may have additional disabilities you should consider, e.g., mobility difficulty, vision loss, hearing loss, and stress or mental health needs. Also, HIV/AIDS effects everyone, including gay men, heterosexuals, older people, and children, so consider how you can design housing that supports the gender identity of residents, a range of ages, and single and family units so that everyone feels comfortable and welcomed. Additionally, the CDC reports a high incidence of Black/African Americans and Hispanic/Latinos with HIV/AIDS. Consider how you can provide a safe, supportive environment for these populations. Overall, you will need to consider inclusion in a wide sense, including issues of poverty, equity, and social justice. (Source: <a href="https://www.cdc.gov/hiv/group/index.html">https://www.cdc.gov/hiv/group/index.html</a>).

#### Virtual Field Trip – See separate schedule and readings

#### Scope of Design

The client is in the process of identifying a location on the campus site for a 30-unit 20,000 sq. ft. permanent housing building for people with HIV/AIDS. You will provide prototypes and ideas for the spaces for the client to consider. Be conscious that the client is on a limited budget so consider carefully your FFE and materials selections: the space must look beautiful without being excessive.

#### **Programming**

Spaces that you will design include:

- Typical 1 Bedroom Apartment, including bedroom, bathroom, kitchen, sitting and dining area, storage, approx. 600-650 sq. ft.
- Typical 2 Bedroom Apartment, including bedrooms, bathroom/s, kitchen, sitting and dining area, storage, approx. 750-800 sq. ft.
- Entrance/gathering space, approx. 400 sq. ft.
- An amenity space for residents based on your research and what residents might enjoy, e.g., home theater, games room, exercise room, spa, etc., approx. 600 sq. ft.
- Access to an outdoor area with seating, tables, and barbeque facilities.

#### **Deliverables**

Your final online presentation should contain:

- Some of your research, your Concept Statement and accompanying visuals
- Schematic Floor Plans and renderings for: typical 1 bedroom unit; typical 2 bedroom unit; entrance/gathering space; amenity space; outdoor area
- Wayfinding strategy
- Materials board indicating finishes, furniture selections, materials, and color scheme

#### **EVALUATION CRITERIA**

- Thorough research about HIV/AIDS
- Concept statement described the feeling of the space with accompanying visuals
- Quality/appropriateness of floor plans
- Renderings successfully conveyed the character of the space
- Wayfinding strategy explained the space
- Materials board with appropriate selection of finishes, furniture, and materials
- Color scheme provided good visual contrast
- Formal presentation was professionally delivered, all team members presented

# Music as an Integrated Spatial Component in Early Education Facilities

Joel Burford, Kansas State University

## ABSTRACT

Recent studies demonstrate that children are not meeting cognitive and developmental milestones. These deficiencies have been linked to emotional and mental health decline, which affects children's learning ability in the education environment. Furthermore, behavioral disorders in children have been on the rise, the effect of which manifests itself as mental health problems by early adolescence (Rowan, 2010; Thomson et al., 2019). One of the major factors that have impacted children in recent years is the exponentially increasing use of technology, resulting in overexposure in young children (Chen et al., 2021). This replacement of physical interactions and play with more screen time resulted in numerous significant negative impacts such as reduced physical activity and elevated stress levels. (Rowan, 2010). Following the COVID-19 breakout of 2020, technology use for educational purposes has skyrocketed. Families, educators, and child health experts since then have been calling for investigation into new and helpful pedagogical approaches. Music is one approach that has proven useful to aid in children's development. Music making is a universal activity; specifically, music therapy improves bilateral coordination, attention span, social interaction, and other aspects of development (Tervaniemi et al., 2018). Accordingly, the positive impact of the music therapy pedagogy and the overall advantage of music can be explored for integrating musical aspects into the learning space of children. Currently, musical elements as a part of an environment have been largely reserved to the occasional outdoor sensory exhibit. There is a gap in the investigation of musical integration of the interior environment for early childhood facilities. Thus, the premise of this research focuses on developing interactive musical spatial elements to aid school children's early mental and social development. The data to inform this investigation will be collected through a series of semi-structured interviews with early education experts

(n=8+) and music education experts (n=8+). Transcriptions will be interpreted in accordance with the iterative thematic analysis method outlined by Braun & Clarke (2006). Based on the findings, a design framework for musical elements at the spatial scale will be developed to aid children's early mental and social development within an early education facility context. This research and the resulting framework are expected to help designers think about music as a spatial component and as a useful tool in early education facility design and develop their own methods of interaction and socialization for children that would enhance the spatial, social, and educational experience.

#### REFERENCES

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77-101.

Chen, C.-Y., Chen, I.-H., Pakpour, A. H., Lin, C.-Y., & Griffiths, M. D. (2021). Internet-related behaviors and psychological distress among schoolchildren during the COVID-19 school hiatus. Cyberpsychology, Behavior, and Social Networking. <u>https://doi.org/10.1089/cyber.2020.0497</u>

Rowan, C. (2010). UNPLUG—don't drug: A critical look at the influence of technology on child behavior with an alternative way of responding other than evaluation and drugging. Ethical Human Psychology and Psychiatry, 12(1), 60–68. <u>https://doi.org/10.1891/1559-4343.12.1.60</u>

Tervaniemi, M., Tao, S., & Huotilainen, M. (2018). Promises of music in education? Frontiers in Education, 3. <u>https://doi.org/10.3389/feduc.2018.00074</u>

Thomson, K. C., Richardson, C. G., Gadermann, A. M., Emerson, S. D., Shoveller, J., & Guhn, M. (2019). Association of childhood social-emotional functioning profiles at school entry with early-onset mental health conditions. JAMA Network Open, 2(1). https://doi.org/10.1001/jamanetworkopen.2018.6694

# Fighting Covid Fatigue: Capitalizing on Opportunities from Continued Online Learning to Reengergize Graduating Seniors

Sylvia Masters, Wentworth Institute of Technology Jordana Psiloyenis, Wentworth Institue of Technology

## ABSTRACT

This abstract provides outcomes of using flexible and creative pedagogical methods to mitigate the emotional strain, disconnect, and motivational challenges caused by the isolation of the Covid-19 pandemic stay-at-home orders for Graduating Seniors in their Capstone Studio. The Pandemic made motivating, inspiring and fostering an environment of creativity for seniors through their final Interior Design Studio challenging. Recent research shows that students closer to graduating faced increases in anxiety (60.8%), feeling of loneliness (54.1%), and depression (59.8%) as a result of COVID-19 restrictions. This prompted the following question: how can this be mitigated through creative pedagogical methodologies for the seniors final design studio? While most students returned to campus for their classes, seniors were given the option to stay remote for their final semester. The resulting Studio was split in two. One group remained fully online and the other a hybrid. The in-person cohort shared an exclusive studio space, but the desks had high pin-up wall partitions creating a physical and visual separation between the desks. With only half the students physically present, this arrangement compounded a feeling of isolation and emotional disconnect. Having to finish their college career outside of the "normal "experience, many expressed feeling depressed and unmotivated. Design thrives in shared workspaces as many creative ideas come from speaking with instructors and other students by serendipitous conversations one stumbles upon in studio. The challenge faced was how to bring the casual and convivial environment that comes with sharing physical space within the strict parameters set by Covid. A few strategies were used to mitigate this sense of disconnection and foster a sense of shared experience. Monthly "section swaps" were scheduled throughout the

semester, where the online group and the hybrid group traded instructors allowing us to work with each other's students. This reconnected the students to a greater group, allowed for a more diverse point of view for their design work and allowed the instructors to switch delivery method: bringing the online instructor on campus to work with the mostly on campus group and providing an opportunity for the on campus instructor to work with the students online. Not only did this arrangement offer the instructors the opportunity to work with all the Seniors, it reenergized and remotivated both the students and instructors . A rotation of design critique methodologies was implemented, switching between one-on-one reviews to small group reviews of three or four students regularly throughout the semester. Here, each group desk critiques were randomized – ensuring that all students were able to see each other's work progress through the semester, while encouraging a sense of community whether online or in person. Lastly, the online and hybrid groups had their formal reviews conducted over the course of two days as a class. Historically, final reviews had been an single all-day event, but Zoom fatigue proved to be a disadvantage to the students presenting in the final timeslots. Students, instructors, and critics would be exhausted by the last few presentations and not give as detailed feedback to the later students than for earlier ones. Using two full days created an equal and mutually beneficial experience for all the students. The virtual presentation modality offered instructors the benefit of reaching out to a more diverse community of professionals accessible through Zoom. This included inviting professionals from various parts of the country to offer their thoughts and insights, adding value and a sense of accomplishment for the seniors. In conclusion, the students' final projects were thoughtful, creative and well executed and all graduated with an average final grade of A minus expressing that the difficult circumstances were made better due to the methodologies above.

#### REFERENCES

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Submission Title: Fighting Covid Fatigue: Capitalizing on Opportunities from Continued Online Learning to Reenergize Graduating Seniors Reference ID: 1126-000141 Submission Title: Fighting Covid Fatigue: Capitalizing on Opportunities from Continued Online Learning to Reenergize Graduating Seniors Reference ID: 1126-000141

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|   | Maximum:                                     |                                       |  | A (96.85 %)                   |  |
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#### Senior Project: Design

#### **COURSE DESCRIPTION:**

Using their Senior Project: Research document as a guide, students design a comprehensive project of their own selection. This capstone project requires students to demonstrate mastery of the design process and fulfillment of their established learning objectives.

#### **COURSE LEARNING OUTCOMES:**

At the completion of this course, the student should be able to:

- Implement the design process by demonstrating research, ideation, iteration, and sketching skills utilizing hand and digital graphic skills in the process of making space.
- Integrate technical information from previous courses, including appropriate finish material selection, application of suitable lighting solutions, universal design, and professional quality presentation techniques.
- Recognize that design solutions should be creative while also reconciling multiple issues of program, existing conditions, aesthetic considerations, functional relationships, as well as technical and regulatory issues such as detailing and code.
- Apply cultural and historic precedents to inform design solutions.

#### **INSTRUCTIONAL METHODOLOGIES:**

This class will consist of XX weeks of instruction including individual and group project critiques and lectures.

#### **STUDENT LEARNING GOALS**

The following learning outcomes will be enhanced through this course:

- Locate information and evaluate it critically for its appropriateness and validity.
- Acquire and use analytical tools and skills for evaluating information and solving problems.
- Acquire and use the skills needed for effective teamwork.
- Recognize and apply concepts of ethical behavior to personal

#### **GRADING BREAKDOWN:**

Your grade for the semester will be made up of the following components.

| Schematic Design Presentation   | 25 % |
|---------------------------------|------|
| Design Development Presentation | 30 % |
| Final Presentation              | 35 % |
| Final Presentation Book         | 10 % |
|                                 |      |

Total

100 %

#### Schedule:

| Week | Class | Class Activity                         |
|------|-------|--|
| 1    | 1     | Introductions;                         |
|      |       | Short Project Presentation to Sections |
| 2    | 2     | One-on-One Desk Crits                  |
|      | 3     | Small Group Crits                      |
| 3    | 4     | One-on-One Desk Crits                  |
|      | 5     | One-on-One                             |
| 4    | 6     | SECTION SWAP                           |
|      | 7     | Desk Crits or Small Grp Review         |
| 5    | 8     | Schematic Design Review                |
|      | 9     | Desk Crits                             |
| 6    | 10    | Desk Crits                             |
|      | 11    | Small Group Reviews                    |
|      |       |  |
| 7    | 12    | Desk Crits                             |
|      | 13    | SECTION SWAP                           |
| 8    | 14    | Desk Crits                             |
|      | 15    | Small Group Reviews                    |
| 9    | 16    | NO CLASS                               |
|      | 17    | Design Development Review PT1          |
| 10   | 18    | Design Development Review PT2          |
|      | 19    | Desk Crits                             |
| 11   | 20    | Small Grp Review                       |
|      | 21    | Desk Crits                             |
| 12   | 22    | SECTION SWAP                           |
|      | 23    | Desk Crits                             |
| 13   | 24    | Desk Crits                             |
|      | 25    | Small Grp Review                       |
| 14   | 26    | Desk Crits - LAST DAY OF CLASS         |
|      | 27    | FINAL PRESENTATIONS PT1                |
|      | 27    | FINAL PRESENTATIONS PT2                |

#### Scholarship of Design Research | Pedagogy | Presentation

### COVID-19 and Teaching Wellness in Interior Design

Gloria Stafford, Univerity of Northern Iowa Heather Carlile Carter, Oklahoma State University Laura Cole, University of Missouri Dawn Loraas, University of Missouri

#### ABSTRACT

Heightened awareness of health concerns and rapid disease transmission are ubiquitous effects of Covid-19, requiring future industry response and strategic curricular adaptations. Interior design educators can prepare their students for future design practice by intentionally integrating wellness into post-pandemic teaching. We explored how and if interior design educators' pandemic experiences shifted their teaching practices around human wellbeing concepts. The Theory of Planned Behavior (TPB) (Ajzen, 1991) predicts target behaviors (Sommer, 2011) including those related to teaching (Dunn et al., 2018) based on: 1) attitudes toward the behavior, 2) whether or not important others adopt the behavior, 3) feelings that the behavior is within one's control, and 4) intention to conduct behavior. The target behavior in the study was the current integration of wellness themes into one's teaching, hereafter called "wellness teaching behaviors." WELL Building Standard categories helped operationalize well-being themes related to the built environment. We developed an online survey adapting previously validated TPB survey instruments (Shiue, 2007) and integrating new questions about the WELL Building standard. A survey link was emailed to CIDA accredited program ID educators. Response rate was very low (7%), likely due to pandemic fatigue (WHO, 2020). However, balance of respondents (n=86) represents a mix of genders (female 64%; male 33%), a fairly even split of age groups between 31-60+, and a range of academic job titles (42% full/associate professors; 34% assistant professors; 24% teaching/adjunct professors). Our respondents indicated teaching across all CIDA standards. SPSS data analysis methods were compatible with our small sample size. Mean differences helped test differences between groups, and linear regression helped

predict teaching behavior based on the TPB. Our regression model, using TPB framework, was a good fit for predicting wellness teaching behaviors with 60.5% variance explained. Nearly 34% of respondents knew someone who experienced severe COVID symptoms, but personal experience with COVID (self or close relations) was not predictive of wellness teaching behaviors in our model. However, two constructs emerged as predictive of teaching behaviors: 1) subjective norms and 2) behavioral intention. Findings about subjective norms indicate that a faculty member's perception about others' teaching practices influences their own teaching choices. Intention to teach wellness was also strongly predictive of actual teaching behaviors, which aligns with many previous TPB studies. ID educators, who indicated that the pandemic caused them to think more about WELL themes, also indicated a significantly higher level of intention to teach wellness to ID students (p=.000). Additionally, 56% of respondents were motivated to teach wellness due to the pandemic, which was a much higher motivator than their belief that it was important for credentialing (23%), institutional expectations (25%), or perceived interest by students (26%). Although survey timing was too early to ascertain if new intentions translate into actual teaching behaviors, results suggest pandemic experiences are shifting educators' thought patterns about integrating wellness themes into teaching. These early results indicate sharing wellness practices among educators-evidencing a new norm-could activate teaching intentions and influence future choices. These results represent the first phase of an exploratory, sequential mixed-methods study. The second phase involves in-depth qualitative interviews during Fall 2021 to gain richer detail on ID educator perceptions of teaching wellness. There is an opportunity for future longitudinal follow-up studies. Uncovering barriers and opportunities educators face in teaching wellness can help design programs align curriculum with the 21st century challenges students will face in their future interior design practice.

#### REFERENCES

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Scholarship of Design Research | Pedagogy | Presentation

## Making the Cut: The Relationship Between Emotional Intelligence and Acceptance into a Limited Access ID Program

Steven Webber, Florida State University Stephanie Sickler, Florida State University

#### ABSTRACT

Context Success in one's profession and the likelihood of rising to positions of leadership can be positively correlated to emotional intelligence (EI), cognitive ability, and personality measures (O'Boyle et al., 2011) with some researchers even stating that EI is the most influential of the three (Joseph and Newman, 2010). While cognitive ability is still considered the best predictor of individual professional performance (Schmidt et al., 2008), EI can also contribute to performance, particularly in collaborative group work in college students (Offermann et al., 2004). CIDA accreditation also prioritizes cognitive ability in the form of awareness, understanding, and application of specific knowledge areas, and the organization embraces the importance of teamwork and multidisciplinary collaboration which is closely tied to EI. The path to creative problem solving is often non-linear and intuitive (Woolley, 2018) which creates a challenge for faculty as they seek to evaluate a student's overall design aptitude and future likelihood of success in the interior design discipline. Due to this complexity, managing the selective entry process is challenging for faculty as they make critical decisions on what should be measured and how those measurements should be collected. Selective entry Interior Design programs strive to evaluate their students fairly, setting them up for success not only in the program but also in their future career. This study examined a potential connection between EI and students' acceptance into a selective entry Interior Design undergraduate program, using the Assessing Emotions Scale (AES) by Nicola Schutte, et. al. Evaluation of hard and soft skills and divergent and convergent thinking is utilized in this study's curriculum to assess students' potential for success in the program, natural overlays for EI and cognition. Methodology Student

participation in the EI test was voluntary and offered as part of a course during the first-year design curriculum prior to the student review process, with data analysis occurring after the selection process was complete to preserve the integrity of the selection process and the research. University IRB approval was obtained to conduct the research. The comparison between accepted and denied students into a selective entry interior design program in light of EI yielded interesting and useful outcomes. Findings EI data of those who were accepted into the program compared to those who were rejected were analyzed based upon total EI score and the four subcategories that make up the total score: perception of emotions, managing one's own emotions, managing others' emotions, and utilizing emotions. Out of the study's 71 participants, 31 were accepted into the program and 40 were denied. Data analysis revealed that accepted students possess a general EI that is significantly higher than the denied students and in three of the four subcategories (managing one's own emotions, managing others' emotions, and utilizing emotions). In the "perception of emotions" subcategory there was no significant difference between the two groups. E.g., both groups perceive emotions equally, but the accepted students possess a higher trait in managing their own emotions, managing others' emotions, and utilizing emotions (see appendix). These post-selection process findings indicate that it may be prudent for educators to consider evaluating EI in the curriculum leading up to a program's selection process and/or during the selection process. This study also indicates that a multi-dimensional approach to conducting a first-year student evaluation may result in selecting students with a higher EI compared to their peers. The value of managing and utilizing emotions is tremendous when considering a path to the design profession.

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### Appendix: Making the Cut: The Relationship Between Emotional Intelligence and Acceptance into a Limited Access Interior Design Program





Appendix: Making the Cut: The Relationship Between Emotional Intelligence and Acceptance into a Limited Access Interior Design Program





Appendix: Making the Cut: The Relationship Between Emotional Intelligence and Acceptance into a Limited Access Interior Design Program

## Architectural Virtual Library to Promote Online Experiental Learning Through Matterport Technology

Maria Delgado, Colorado State University

#### ABSTRACT

Problem/Background During the COVID-19 pandemic, municipalities imposed social distancing regulations that disrupted schools' abilities to provide students with in-person educational programing activities (e.g., field trips). This structural shift affected interior architecture education because curriculum literature shows that, according to the experiential learning theory, knowledge is formed through experiences (Kolb, 1984). Therefore, a lack of experiential learning opportunities reduces students' chances to acquire knowledge from site-specific experiences. Objective This research project aimed to provide experiential learning opportunities of historic architecture building interiors through virtual tours. In particular, the research project examined the use of Matterport technology (2021), a three-dimensional camera system that provides immersive virtual experiences for viewers. Moreover, the project explored the use of Mattertags, which are defined points in a 3D model that allow viewers to acquire site-specific knowledge about the virtual space through various media, such as images, videos, and descriptive texts (2016). Methods The project approach included 3D documenting of the interior spaces of 18 historic buildings to increase experiential learning opportunities for students. The research project consisted of four stages. First, we worked with community members to determine which buildings to include and to collect historic buildings' information. Once the building list was finalized, we researched and documented historic floor plans, photographs, and published articles from the university archived library and the National Register of Historic Places database (National Park Service, 2021). Next, we physically scanned each building's interior space to capture the virtual 3D model (Figure 1). Then, the researched content was embedded into the 3D models via the Mattertags. Finally, the 3D models were published on the

university website to share with the public. Conclusion The completed project included a web page titled the Architectural Virtual Library, which provided public access to the virtual tours. The web page also provided instructions for participants to interact with the content. Specifically, the web page provided a customized legend that guided viewers through the virtual experience. The legend was color-coded into four categories-green, gold, orange, and gray. Each color corresponded with a specific type of information: green provided information about architectural materials or features; gold provided pictures; orange provided floor plans; and gray provided published articles. Furthermore, all the material posted on the web page complied with digital accessibility principles to provide an inclusive experience for all participants. Significance In sum, this work contributed to interior architecture education. First, the web page allowed educators to bypass social distancing regulations while providing their students with valuable experiential learning opportunities. Teachers could generate various types of assignments based on the Architectural Virtual Library, such as the following: (a) a history paper for which students have to read and synthesize information from the historical architectural content posted in the Mattertags; (b) a scavenger hunt in which students search for and find architectural features in different buildings; or (c) a spatial planning assignment in which students have to use the Matterport measuring tool to verify dimensions and understand ergonomics. In accordance with the project goals, the Architectural Virtual Library allowed students to engage with innovative technology to experience the built environment in an alternative form. Finally, this project has the potential to grow because, over time, new buildings in diverse geographical locations can be added to the library to broaden the architectural material content and extend new experiential learning opportunities for students.

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The Architectural Virtual Library (AVL) project is an online web page ntended to educate the public on historical architectural buildings both on and off-campus.

- 1. Online web page with various historic Matterport virtual tours.
- 02. Embedded Mattertags displaying historical floor plan
- 03. Matterport 3D view of a historic buildin
- 04. Matterport floor plan view
- 5. Student documenting 3D building spaces.

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## Incentives May Help Improve Creative Performance: A Case Study of Incentive Motivation in Interior Design Studio

Jinoh Park, University of Arkansas

#### ABSTRACT

This research examines whether incentives can help motivate an interior design studio to improve performance in design outcomes. Incentives affect performance improvement (Hockenbury, S. E., & Nolan, S., 2018), and the experience of good performance affects selfefficacy (Christensen-Salem, A. & et al., 2020). In a design studio that requires creative performance outcomes, improving creative performance outcomes is key to improving selfefficacy. This study investigates the effect of incentives on improving creative performance in interior design studios to enhance students' creative self-efficacy. This research conducts an exploratory case study (Yin, R., 2017) to answer this research question "Do incentives help improve students' creative performance in an interior design studio, from each stage to the end of semester?" The study uses portfolio book printing and 3D model printing as incentives for students at seven stages of the design studio process, including planning, study models, drawings, visualization, and three reviews; these incentives were tested with two-year students of the other institution for two years; while it is not demonstrated that the students preferred the incentives significantly through research, it was possible to confirm the fact that there were students' preference for the incentives. Its research population includes all third year students in one interior design program with CIDA accreditation. The incentive system is presented to the students, who are research participants, in the second stage after the first stage. The motivation level of the first stage when students thought there was no incentive serves as a reference level. The motivation levels of students at the second through seventh stages are compared to the reference level. This study collects responses to students' motivation through the same Likert scale questionnaires for each of seven stages. After the end of the semester, the flow of change in motivation during the semester is grasped through both Likert scale questionnaires and semiconstructive interviews with three focus groups: 1) the first group of students who received 2 incentives, 2) the second group of students who received 1 incentive, and 3) the third group of students who did not receive any incentives. The survey questionnaires and interview questions were developed based on references conducted by the Incentive Research Foundation (IRF), an organization specializing in science of motivation and incentives. To ensure objectivity, all surveys are conducted 1) within three days after students submit their design outcomes of each stage 2) before the announcement of incentive awardees, and all survey and interview are approved by the IRB protocol. The collected data is analyzed with the explanatory-sequential mixed-methods framework (Plano Clark, V. L. & Creswell, J. W., 2017). The answers collected by the Likert scale questionnaires build the backbone of research findings, and the focus group interviews identify the context not revealed in the survey. Based on the answers collected by the Likert scale questionnaires, the research finding is derived after identifying the context not revealed in the survey through the focus group interview. As a result, this research addresses whether 1) the two incentives are effective to amplify students' motivation, 2) the incentives help to improve the quality of each process and overall results, and 3) there is any change in students' creative self-efficacy if incentives affect the qualitative improvement of creative performance. Consequently, this research establishes an initiative casestudy of utilizing incentive motivation in the interior design studio for improved creative self-efficacy in line with the goals of the preprofessional program.

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Scholarship of Design Research | Pedagogy | Presentation

## Misinformation or Disinformation: A Study of Interior Design in Family Consumer Science Education

Steven Webber, Florida State University Susie Tibbitts, Utah State University Alana Pulay, Washington State University

#### ABSTRACT

Many secondary education students explore the interior design profession by taking a Family Consumer Science course. Interior design is a pathway in Career Technical Education (CTE) which is the framework Family and Consumer Sciences (FCS) uses to build program curricula. The courses provide real-world knowledge in various careers and help students prepare for postsecondary education or a job. In addition, this framework allows FCS secondary school programs to have the flexibility to design curriculum to meet the current local employment and economic needs (LEADFCS, 2021). It is unknown how many FCS programs include interior design in their curricula, as the flexible framework allows the programs to customize their content. However, FCS programs that include interior design focus on residential design and history (Pulay & Tibbitts, 2021), leaving behind commercial design, which makes up 89% (BLS, 2018) of the interior design profession. This is problematic for post-secondary programs and the interior design field, as many young individuals already have misconceptions based on popular TV shows (Waxman & Clemons, 2007). The FCS instruction is potentially reinforcing these misconceptions rather than clarifying them. The lack of understanding of the complexities of the profession may leave students unable to identify interior design as a desirable major when entering post-secondary education. It could also contribute to the lack of diversity in interior design university programs, and therefore the industry. Conversely, some beginning students are surprised at the technical knowledge, codes, and architecture taught in post-secondary interior design programs. There are ninety-nine Family Consumer Science Education (FCSE) programs at universities in the United States whose students graduate and become FCS educators. Of these ninety-nine programs, it is unknown how many include interior design training for their FCSE university students (Holland, 2021). However, both residential and commercial interior design concepts are included in the integrative elements of the American Association of Family and Consumer Sciences (AAFCS) university program accreditation Body of Knowledge (BOK) (Nickols et al., 2009). This may mean that FCS educators have knowledge of commercial interior design, but choose not to include it in their curriculum. A content analysis (Neuman, 2012) is currently being performed on the ninety-nine United States FCSE university programs to document and identify 1) if interior design content is included in university FCS education coursework 2) in programs that do include interior design, if residential or commercial interior design content is covered 3) how many credit hours are included and 4) what program is teaching the interior design content. The results of this content analysis will allow us to identify if FCS educators are being exposed to interior design content in their training to become FCS educators and what interior design content they are receiving. If FCS educators only learn residential design and interior design history in their university courses, then it is difficult for them to teach commercial design to their secondary students. Effective teachers include content when they have a deep understanding and a full breadth of knowledge (Danielson, 2013); therefore, the FCS educators are limited by their comprehension of the profession. The content analysis will uncover the reasons behind this complex issue. It is natural to include interior design content in the FCS curriculum because both the FCS and the interior design disciplines focus on the relationship between occupants and their society, nature, and built environments (Deaton & Daughtery, 2020; Swafford & Rafferty, 2016). However, the lack of understanding of the breadth of knowledge within interior design is causing a perpetuation of misinformation. Determining the source of the inaccuracies will create an opportunity to inform and educate.

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## Interdisciplinary Educational Modules: Visual Comfort Optimization in Responsive Façade Design

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#### ABSTRACT

Innovation arises from the intersections of different disciplines. Collaborations between different disciplines provides unique opportunities for integrating ideas and methods, infusing skills, sharing tools, utilizing teamwork, improving cognitive abilities, and thinking critically to develop and form new knowledge and products. The process of designing, prototyping, and evaluating the performance of a contemporary building with responsive facade can help students in interior design programs to be more involved in interdisciplinary projects that are inspired by use of knowledge from other fields. In this paper, the authors present interdisciplinary activities that can be used in senior design projects, independent studies, and graduate theses by both undergraduate and graduate students in architecture and interior design programs. The proposed hands-on activities include design and implementation of responsive facade systems, identifying design variables, selecting efficient visual comfort metrics, simulating parametric case studies, designing experiments, measuring influence of design variables on visual comfort metrics, and proposing optimal solutions for visual comfort metrics by using design variables for different design scenarios. These student activities require utilizing Grasshopper-for-Rhino software for parametric design simulation of responsive facade and using Honeybee and Ladybug plug-in for visual comfort measurements to determine the optimum hourly visual comfort metrics. Through these activities, students improve their skills in Computer Aided Design, oral and written presentation, experiment design, and analytical thinking. These activities also improve students' professionalism and team-work skills that are crucial attributes in contemporary working environments. The educational objectives of the proposed activities closely associate with most

of the student outcomes required by the Council for Interior Design Accreditation and National Architectural Accrediting Board.

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## In-Person vs. Online Studio Culture for Teaching Soft-Skills: A Study of the Stronger Learning Environment

Cindy McClure, Marymount University

#### ABSTRACT

Interior design education teaches both cognitive and non-cognitive skills, otherwise known as hard skills (measurable) or soft skills (traits that make one a good employee). CIDA standards for accredited schools include both hard and soft skills. Gale and Bender (2020) outlined five themes of pedagogy or instructional techniques, surrounding teaching soft skills in interior design studios. These include modeling the skill, assignment, lecture or readings, discussion or critique (a group activity), or feedback (one-on-one). At the core of most interior design programs are studio classes. The research of Vyas, van der Veer, and Nijholt (2013) shows that the physical setting of a studio is meant to stimulate communication, sharing and collaboration and promotes a style of learning based on continuous dialogue, conversation, and critiquing other's work. While not impossible, it is difficult to create this culture online. Also, studio classes not only teach the hard skills but provide the forum that most realistically emulates the working environment, thus providing students the opportunity to develop soft skills. Higher education enrollment has been declining. To combat this, many universities and colleges have been preparing for some form of a transition to increase their offerings of online learning. COVID-19 forced a much quicker transition and forced many educators to reevaluate their pedagogies. Understanding which pedagogies and techniques are understood by the students in teaching the specific soft skills of communication, time management, flexibility, collaboration, and professionalism in both environments is critical. An IRB approved (2.2.21) survey questionnaire was distributed to current educators and students in all CIDA accredited programs. To identify the techniques utilized or understood, educators must have taught the same level interior design studio class, both in-person in the fall of 2019 and online/hybrid in the fall 2020

and students must have attended a studio class in both semesters. Content and statistical analysis of educator (n=129) and student (n=57) responses are aimed to inform what students and educators believe is the value of in-person vs. online/hybrid learning environments and which pedagogies are successful in teaching soft skills online/hybrid. The findings show that educators experienced significantly more challenges teaching studio online and students significantly understood more soft skills in an in-person studio environment. Creating opportunities for students to connect with each other will be critical in moving to online platforms. Further, this should point out to administrators where resources should be dedicated to support both educators and students if institutions choose to move to an online or hybrid format and want to provide comparable learning experiences.

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## Building Codes Course Integration in Interior Design Curricula

Ashley Hughes, Mississippi State University

#### ABSTRACT

How do interior design educators teach students building codes to promote generalization of the material from classroom and studio assignments to real-life projects after graduation? The knowledge of how to understand and comply with applicable building codes is one major factor that distinguishes "Interior Designers" from "Decorators", (ASID, 2021). Experience in applying building codes to creative design is an important component of a well-structured education in interior design. Interior Designers are required to protect the health, safety and welfare (CIDQ, 2019) of the public through their designs, and CIDA, the accrediting body for interior design programs, has dedicated an entire standard to code instruction in the interior design curriculum requirements (2020). The purpose of this research was to better understand how building codes instruction is integrated into the curricula of CIDA accredited Interior Design programs, and to investigate whether building codes are taught as a stand-alone codes course or integrated into studio or other lecture-based courses. An effort to revamp present curriculum and comments by employers who noted a lack of code knowledge with recent graduates led to an interest in how programs at other educational institutions were meeting CIDA curriculum requirements. A survey questionnaire was designed to identify the variety of building code instruction methods by Interior Design programs accredited by CIDA. Additionally, the survey instrument measured the respondents' opinions about the importance of building code instruction. The web-based questionnaire included 23 items, of which approximately three-fourths focused on program level information with the remainder focused on respondents' opinions. A database of email addresses for 1,368 interior design educators in the U.S. was assembled. This sample of potential survey respondents included all interior design educators whose direct email address was listed on the website of the institution for which they taught. The educational institutions included all

accredited programs listed on CIDA's website. Using this sample, a standard web-based survey protocol was followed. This included sending each educator up to 3 email invitations to participate in the survey (Dillman, 2007, pp. 352-401). The data collection period lasted two weeks, at the end of which 283 completed surveys were secured for a response rate of 21%. Out of 159 programs accredited by CIDA, the survey responses provided information about 108 programs, for a program level response rate of 67%. Results showed that 100% of respondents reported that their interior design program included some level of building code instruction as part of its curriculum, and that the educators believed building code instruction is important for training competent interior designers. Only 38% of the respondents reported that building codes were taught in a dedicated, stand-alone course. The majority of respondents (62%) indicated that building codes were taught as part of a studio or other lecture-based course. Building code instruction is primarily included in the second undergraduate year (43%) or the third undergraduate year (45%) of a four-year program sequence. Courses designed to teach building codes, whether standalone or studio-based, were primarily taught by educators with an Interior Design background (67%) or a background in architecture (31%). The results of this study provide a current assessment of how building code instruction is being incorporated into CIDA accredited interior design programs across the nation. This leads to future discussions regarding whether a stand-alone course in building codes would increase the students' understanding and ability to generalize and apply the knowledge learned. The results of this survey can help educators across the nation design curriculum that better prepares students to work effectively as interior designers in their post-graduate careers.

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#### APPENDIX

#### EXAMPLE QUESTIONS FROM SURVEY QUESTIONAIRRE

1. The goal of this study is to assess opinions about the curriculum in Interior Design programs. To what extent are you familiar with your school's Interior Design curriculum?

- Not at all familiar [screen out]
- Somewhat familiar
- Very familiar
- Prefer not to respond [screen out]

#### 5. Does your program include the instruction of building codes?

- 1) Yes
- 2) No
- 3) Don't Know
- 4) Prefer not to respond

7. What is the most common professional background of the person who teaches building codes at your institution?

- 1) Architect
- 2) Interior Designer
- 3) Engineer
- 4) Other (please specify: \_\_\_\_\_)
- 5) Don't Know
- 6) Prefer not to respond

8. In which of the following types of courses are building codes taught?

- (Select all that apply)
- Construction documents course
- □ Studio course
- Materials course
- □ Stand-alone building codes course
- □ Other (please specify: \_\_\_\_\_)
- Don't Know
- Prefer not to respond
- 9. Are students in your program required to conduct codes research?
  - 1) Yes
  - 2) No
  - 3) Don't Know
  - 4) Prefer not to respond
- 10. In which of the following types of courses are students required to conduct codes research? (Select all that apply)
  - Construction documents course
  - Studio course
  - Materials course
  - □ Stand-alone building codes course
  - □ Other (please specify: \_\_\_\_\_)
  - Don't Know
  - Prefer not to respond

11. Does your interior design program require students to take a stand-alone course dedicated to the teaching of building codes?

- 1) Yes
- 2) No
- 3) Don't Know
- 4) Prefer not to respond

12. How many total credit hours are dedicated to the stand-alone course for building codes instruction?

- 0) No credit hours
- 1) 1 credit hour
- 2) 2 credit hours
- 3) 3 credit hours
- 4) 4 credit hours
- 5) More than 4 credit hours
- 6) Don't Know
- 7) Prefer not to respond

13. Which of the following codes/standards are taught as part of your stand-alone building codes course?

- (Select all that apply)
- International Building Code
- National Fire Protection Association
- Sustainability Codes
- Americans with Disabilities Act
- Don't Know
- □ Prefer not to respond

14. Identify the year in your program's curriculum sequence that your stand-alone building codes course is taught?

- 1) Undergraduate Year 1
- 2) Undergraduate Year 2
- 3) Undergraduate Year 3
- 4) Undergraduate Year 4
- 5) Graduate level curriculum
- 6) Don't Know
- 7) Prefer not to respond

17. On a scale from 1 to 5 with 1 meaning "Strongly Disagree" and 5 meaning "Strongly Agree," please rate the importance of the following statements ...

|   | 1 | 2 | 3 | 4 | 5 | DK | RF |
|---|---|---|---|---|---|----|----|
| a) Building codes are an important topic to be covered in an interior design curriculum.  | O | O | O | Ο | 0 | 0  | 0  |
| <ul> <li>b) Building codes instruction in a stand-alone<br/>course is important in interior design<br/>curriculum development.</li> </ul> | Ο | O | Ο | 0 | 0 | 0  | 0  |
| c) Building codes instruction can be successfully incorporated into studio-based courses without the need for a stand-alone course.       | О | O | О | 0 | 0 | 0  | 0  |

Frequencies

**Frequency Table** 

## [Q05] Does your program include the instruction of building codes?

|       |     | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------|-----|-----------|---------|---------------|-----------------------|
| Valid | Yes | 106       | 100.0   | 100.0         | 100.0                 |

# [Q07] What is the most common professional background of the person who teaches building codes at your institution?

|       |                       | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------|-----------------------|-----------|---------|---------------|-----------------------|
| Valid | Architect             | 33        | 31.1    | 31.1          | 31.1                  |
|       | Interior Designer     | 71        | 67.0    | 67.0          | 98.1                  |
|       | Engineer              | 1         | .9      | .9            | 99.1                  |
|       | Prefer not to respond | 1         | .9      | .9            | 100.0                 |
|       | Total                 | 106       | 100.0   | 100.0         |                       |

## [Q09] Are students in your program required to conduct codes research?

|       |            | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------|------------|-----------|---------|---------------|-----------------------|
| Valid | Yes        | 99        | 93.4    | 93.4          | 93.4                  |
|       | No         | 6         | 5.7     | 5.7           | 99.1                  |
|       | Don't Know | 1         | .9      | .9            | 100.0                 |
|       | Total      | 106       | 100.0   | 100.0         |                       |

#### [Q11] Does your interior design program require students to take a stand-alone course dedicated to the teaching of building codes?

|       |            | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|-------|------------|-----------|---------|---------------|-----------------------|
| Valid | Yes        | 40        | 37.7    | 37.7          | 37.7                  |
|       | No         | 65        | 61.3    | 61.3          | 99.1                  |
|       | Don't Know | 1         | .9      | .9            | 100.0                 |
|       | Total      | 106       | 100.0   | 100.0         |                       |

|         |                      | Frequency | Percent | Valid Percent | Cumulative<br>Percent |
|---------|----------------------|-----------|---------|---------------|-----------------------|
| Valid   | Undergraduate Year 1 | 1         | .9      | 2.5           | 2.5                   |
|         | Undergraduate Year 2 | 17        | 16.0    | 42.5          | 45.0                  |
|         | Undergraduate Year 3 | 18        | 17.0    | 45.0          | 90.0                  |
|         | Undergraduate Year 4 | 3         | 2.8     | 7.5           | 97.5                  |
|         | Don't Know           | 1         | .9      | 2.5           | 100.0                 |
|         | Total                | 40        | 37.7    | 100.0         |                       |
| Missing | System               | 66        | 62.3    |               |                       |
| Total   |                      | 106       | 100.0   |               |                       |

# [Q14] Identify the year in your program's curriculum sequence that your stand-alone building codes course is taught.

## Integrating Universal Design Instruction into Project-Based Learning in Interior Design Studio

Yeji Yi, University of Oklahoma Suchi Bhattacharjee, University of Oklahoma

#### ABSTRACT

Integrating universal design instruction into interior design projects is an ongoing discussion (IDEC International Annual Conference, 2019). Universal design is a key concept addressing human-centered design, which is one of the goals that CIDA-accredited interior design programs need to achieve (CIDA Professional Standards, 2020). According to Tauke et al. (2016), 72% of instructors responded "very effective" or "moderately effective" when universal design components were integrated into their curriculum either in studios or non-studio courses. It is necessary to discuss effective pedagogy that encourages students to identify, analyze, and apply universal design principles in their design solutions. This presentation introduces a six-week design studio project designed to thoroughly incorporate universal design components and inclusive goals in students' design solutions. Project-based learning is a widely-used method in design studios, with a given assumption that students best learn from the hands-on project. To make this student-centered pedagogy successful, it is crucial to select an appropriate building site and design requirements to meet learning objectives. Life.Church lobby was selected as a project site. When it comes to learning universal design components, the church is an adequate site to be explored as it embraces diverse users, including children, elderly people, people with disabilities and also from various social, economic and cultural background. The program requirement included design functions such as information wall, refreshment area, waiting area etc., which requires incorporation of universal design principles for comfortable and efficiency use. Typical to any other design studio, the students followed Karlen & Fleming's (2016) programming and design stages: research, precedent study, design concept programming with criteria matrix and prototypical plans, schematic design with relational and block diagrams, preliminary floor plan with furniture and finish selections, design development, and final presentation. Along this wellestablished process, universal design components were integrated at various levels (Appendix A). The presentation will qualitatively review students' reflections on their experiences in their project process. Expected outcomes include students' clear understanding of universal design principles, design outcomes that addressed the inclusive design criteria, and ultimately, enhance perspectives to use interior design as a tool to embrace people with a range of abilities.

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| Programming Stage  | Universal Design Component  |
|--|---|
| Research   | • Analysis on building users with a range of abilities  |
| Precedent Study  | <ul> <li>Analysis of the appropriate size of space</li> <li>Exploring the implication of universal design from previous practices.</li> </ul>                                     |
| Design Concept   |   |
| Programming Criteria Matrix & Prototypical<br>Plans<br>Schematic Design & Relational/Block Diagram | • Efficient circulation and spatial planning that address user's activities   |
| Preliminary Floor Plan & Furniture/Finish<br>Selections<br>Design Development                      | • Introduce 7 principles of universal design<br>and creative thinking on how the principles<br>can be applied to design solutions   |
| Presentation   | <ul> <li>Encourage students to include people with diverse abilities in their presentation images.</li> <li>Verbal presentation including universal design principles.</li> </ul> |

#### Appendix A. Integration of Universal Design Component in Design Programming
Scholarship of Design Research | Pedagogy | Presentation

# Life Cycle Analysis: The State of Materials Eductaion in Interior Design Programs

Helen Turner, University of Kentucky Stephanie Sickler, Florida State University

## ABSTRACT

PROBLEM The relevance of materials to interior design education and practice is expressed by numerous criteria associated with accreditation, licensure, advocacy, and industry value. Experience and perception of the authors as materials educators, however, indicate a potential disconnect in academic programs. To investigate this perception, the authors created a survey that was sent to all interior design programs accredited by the Council for Interior Design Accreditation (CIDA), then analyzed the resulting data to understand the current state of materials education in the framework of contemporary practice. CONTEXT The full definition of 'Interior Design' provided by the Council for Interior Design Qualification (CIDQ), expressly includes "interior building materials and finishes" as a knowledge and skill interior designers contribute to the built environment. Further, "selections and materiality" is identified as a main component in the scope of interior design services. In order for design practitioners to achieve professional certification, the National Council for Interior Design Qualification (NCIDQ) Examination requires confirmation of knowledge related to materials in all three sections. The International Interior Design Association (IIDA) also advocates for laws and legislation that impact how interior designers practice through Policy Statements which rely on "materials" as a specific area of expertise. What is more, a report by Business Wire (2021), indicates that the global market for Interior Design Services in 2020 was estimated at over \$150 billion, while a study by Statista (2019) estimated the value of interior design related markets, including paint, flooring, surface materials, fabric and wallcovering, at almost \$78 billion. Related to education necessary for interior design practitioners, the CIDA Professional Standards of 2020 establishes 'Products and Materials' as a necessary area of knowledge acquisition and application (CIDA, p.27). Beyond this standard (13) and the five associated substandards, materials are explicitly

mentioned in four additional substandards (10b, 12i, 15d, 16c), as well as a Program Expectation (3e), while tangentially connected to many more. Though these facts and evidences prove the need for material education as a preparation for practice, the authors wanted to better understand the expectations placed on those who are responsible for teaching materials as well as the programs and curriculum within which they teach. METHODOLOGY A survey targeted faculty teaching materials courses in CIDA accredited interior design programs by email, soliciting participation through multiple choice and likert scale questions designed to gauge faculty perceptions of various aspects of materials education. Eighty responses were collected representing a 55% response rate. Study findings indicated that 100% of respondents felt materials education was important or highly important, yet 62% reported their program has only one course of 3 to 4 hours dedicated specifically to materials instruction. Additionally, 46% reported content related to materials is delivered in lecture-based courses, and 59% of respondents revealed that this instruction occurs in the second year of study. CONCLUSION Based on the study, it seems as though the prominence of materials in the practice of interior design and the requirements placed on interior designers may not be in balance with the inclusion of materials in design education and perceptions of educators. As such, this presentation will not only elaborate on the results of the study, but intends to also engage attendees in a life cycle analysis of materials in education and practice to catalyze discourse and potential action.

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Scholarship of Design Research | Pedagogy | Presentation

# Civic Engagement and Design Research: Partnering with SIA of Los Angeles to Save the Lytton Building

Diane Al Shihabi, Iowa State University Mikesch Muecke, Iowa State University

### ABSTRACT

In the Fall of 2020, two professors partnered with members of the non-profit Saving Iconic Architecture (SIA) of Los Angeles to strategize how design educators could assist the organization's efforts to save the historic Lytton Savings & Loan Building at 8150 Sunset Boulevard in West Hollywood. Financier Bart Lytton commissioned the building, which was designed and constructed by Hagman & Meyer in 1960 in the New Formalist style. The principal architect was Swiss émigré Kurt Werner Meyer (1922-2014), who started his own firm, Cox, Hagman, and Meyer, in 1957. The interiors were designed by Adele Faulkner (1911-2000), from A.I.D. and Associates, who was the first woman to be named a fellow by the American Society of Interior Designers (Wuellner 2014, 34). She collaborated with Meyer on many projects, won a national award from ASID for this work, and taught Interior Design at UCLA for seventeen years. Two years later Lytton added a large addition, housing a media center and art galleries, that showcased the work of local artists, women, and minorities. Many celebrities toured the exhibits and took part in the film screenings on site, including "Martin Luther King, Israel Ambassador Abba Eban, Producer Joseph Levine, Herbert Luft of the Hollywood Foreign Press, Dean Martin, Pierre Langlois, Head of [the] Cinema Museum in Paris, [and] Dick van Dyke" among others (Wuellner 2014, 39). Architectural Digest (Spring 1963) featured the 'Lytton Center,' as a modern architectural complement to the main Lytton building. Fast-forward to 2020: a developer owns the Lytton building and site, and Frank Gehry has been selected as the architect of the new development. Gehry had proposed a project that would require the Lytton Building to be moved or demolished. The Lytton building's concrete structure made it difficult

to move, hence the threat of demolition. The city council refused to approve Gehry's design, and a stay was put on the demolition of the Lytton building. This allowed a window of time to effect change. Research questions were 1) how could the Lytton building be re-envisioned to serve the community and economic interests, and 2) how could the remaining site be redeveloped to include the Lytton Building in a new scheme. The professors proposed that two courses from two different disciplines would develop a variety of design solutions, communicate ideas graphically and orally, and provide completed documents to SIA to publicize alternatives to demolition. Thus, in the Fall 2020 semester students in an architecture studio and in an interior-design preservation seminar collaborated on the designs for an addition to and a rehabilitation (NPS 2018) of the iconic mid-century building. The research methodologies included broad analyses of the building from historical, architectural, and cultural perspectives, a demographic study of West Hollywood, feasible rehabilitation solutions for the building that would serve the community and generate revenue, and an addition that would fulfill a need lacking in West Hollywood/Los Angeles. Findings reveal that the building's most distinctive external features are the unique folded-plate concrete roof, a travertine-clad facade, and large glass panels facing Sunset Boulevard. Further that the interior's character-defining features are the floating travertine staircase, two-story interior courtyard with Roger Darricarrere's stained glass screen, and geometric furniture and furnishings. These features would be retained in the rehabilitation. Professor's and SIA collaborators jointly selected rehabilitations and additions to be publicized. The project demonstrates a type of collaboration that helps to sustain a community's cultural and architectural identity and helps build the social and cultural character of design students.

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## Scholarship of Design Research | Practice | Presentation

# How is COVID-19 Changing the Workplace? What Workers Really Want.

Barbara Young, Purdue University

### ABSTRACT

Over a year after the COVID-19 pandemic shutdown, workers have returned to workplaces in full capacity, some returned only to be sent home again, and others have yet to return. Regional differences in population size, politics, and infection rates have influenced these inconsistencies. For many companies, attention has turned to managing a phased return to the shared office (Charbauski, n.d.). Recommendations for a safe return have been offered from the onset, with varying degrees of effectiveness. Early in the pandemic, designers from multiple disciplines produced a variety of ideas for safely returning to public spaces and workplaces. Architecture and design firms, large and small, crafted recommendations on air circulation, spatial layouts, and material responses based on the limited knowledge that was available during our evolving understanding of the virus. Furniture manufacturers posited a variety of options for reconfiguring office spaces and proposed new products that promised to provide separation while maintaining visibility. As we learned more about the viral spread, it became apparent some initial interventions were ineffective. For example, clear plastic barriers, which initially made intuitive sense, proliferated without research to support their efficacy and recent studies suggest they do little beyond making a person feel safe (Goldberg, 2021; Sarti et al., 2021). The conclusion for most experts remains that donning a mask, providing increased ventilation, and maintaining physical distance are the best defenses in mitigating the spread of this disease (Bazant & Bush 2021; CDC, 2021). Contemporaneous with initial recommendations, the author collaborated with an industrial designer to develop a COVID-19 response. The team viewed the environment holistically and considered physical barriers to be prohibitive for advancing contemporary workplace culture, which aims to promote collaboration through social connections and chance encounters. Given an understanding that proper ventilation is a major factor for quality indoor air, the team began to contemplate ideas for effectively increasing ventilation in areas where

people congregate. Additionally, with concern to save energy, we explored ways to delimit specific areas and provide occupant sensors for targeted increases on demand. After multiple design iterations, the team developed a HEPA air filtration fan that clamps onto any desk surface, creating an air barrier between adjacent employees while filtering particulates. To gain understanding of how this solution would be received in the current workplace, the team developed a survey for user feedback which included general insights about work place perceptions. Additionally, the author held two separate casual conversations, in form of a metalogue, with employees still working form home to understand concerns about returning to work. Over fifty survey respondents, from companies of varying sizes across the U.S., indicated their current working conditions, ranked factors for an ideal work environment, and provided feedback on the desktop air filtration system. A majority of respondents are still working from home and rated "safety", on average, as the top factor for the ideal work environment followed by "quiet" and "privacy". Access to views fell last in the average rankings behind "working with others". Children, established social networks, and a new uniformity of communication for distributed teams were main issues interlocutors runniated on in relation to whether or not they and their colleagues desired a return to the workplace. Some just "want peace and quiet" and others feel "no reason to return". These insights are valuable for managing a return to the office and designing workspaces that are comfortable for employees who are, of late, reluctant to participate in active, collaborative, environments. As the great resignation is teaching us, we are not back to business as usual.

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# Designing an Approachable Store: Empirical Evidence for Design Composition of Lighting and Sound in Café Design

Kyuho Ahn, University of Oregon King Tang, Ratcliff Architects

## ABSTRACT

Many designers agree that the architectural environment influences human behaviors and predicts human performances. This idea is particularly useful for commercial design applications. Researchers have investigated such relations, and examples include intensity of lighting and merchandise selection (Summers & Hebert, 2001) and lighting condition preference between Western and Eastern consumers in a guest room (Park et al., 2010). While studies that investigate one-on-one relations are common and provide useful evidence applicable in design practice, developing interior design specific theories that support design composition dealing with multiple architectural stimuli are needed. Therefore, this study aims to provide a theoretical framework useful for design composition and its empirical evidence. Based on the Stimuli-Organism-Response (SOR) paradigm (Donovan & Rossiter, 1982), Preference Theory (Kaplan & Kaplan, 1982), and Aesthetic Theory (Berlyne, 1971), we suggested a theoretical framework in which comfort and arousal are the central inner organisms induced by environmental stimuli, and their interactions mediate feelings of pleasure (response), which affects behavioral intents. Comfort is conceptualized as a positive linear function to pleasure, and arousal is conceptualized as a negative quadratic function to pleasure. We used light, sound, and motivational conditions in an empirical study to test the framework in a café environment. The findings disseminated at a previous IDEC conference supported the framework that intermediate arousal level (medium lighting condition) under a comfortable environment (under music) optimizes the feeling of pleasure. However, the previous findings did not provide information on the role of sound and light to comfort and arousal, or the role of comfort, arousal, and their interaction to pleasure and

behavioral intents. Additional and follow-up statistical analyses have been conducted and this paper disseminates the new findings of the clearer relationships that emerged. In an experimental study, each participant took a survey while being exposed to randomly ordered and computer rendered café images of four different lighting conditions (darkest/medium-low/mediumhigh/brightest) projected on a screen. Four different sound conditions (no-sound/softmusic/upbeat-music/noise) and three motivational scenarios (control/low-arousal/high-arousal) were administered between measures. A total of 89 subjects volunteered, and each participant was randomly assigned to one of eight experimental sessions. A series of mixed design ANOVA were calculated to examine the effects of lighting, sound, and motivation on perceived comfort and arousal. A Pearson correlation and linear and quadratic regressions were performed to investigate the relationships among four different variables: comfort, arousal, response/pleasure, and behavioral/shopping intents. The results of ANOVA showed that both lighting and sound induce both comfort and arousal. Medium low lighting and soft music induced the most comfortable feeling regardless of motivation. Motivation does not influence level of comfort in a café. The noise induces the lowest comfort. There were no significant interactions among lighting, sound, and motivation on comfort. Motivation has significant effects on perceive arousal, and the high motivational scenario increases perceived arousal feeling. Significant interactions were found among lighting, sound, and motivation except the sound-motivation interaction. The result of the Pearson correlation and regressions indicated that comfort is the best predictor for pleasure. Pleasure is a better predictor for behavioral intents. However, arousal is a better predictor for comfort as a negative quadratic function and it improves the prediction for pleasure when combined with comfort.

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# Figure 1. Summary of Perceived Comfort and Arousal Effected by Lighting X Motivation X Sound



# Table 1. Output of Pearson Correlation Coefficient: Arousal, Comfort, Response, and Behavioral Intent.

|                   |                     |             |               | Response      |                 |
|-------------------|---------------------|-------------|---------------|---------------|-----------------|
|                   |                     | Arousal     | Comfort       | /Pleasure     | Shopping Intent |
| Arousal           | Pearson Correlation | 1           | 342 (591)**   | 227 (477)**   | 227 (473)**     |
|                   | Sig. (2-tailed)     |             | .000          | .000          | .000            |
|                   | Ν                   | 355 (52)    | 354 (52)      | 355 (52)      | 352 (51)        |
| Comfort           | Pearson Correlation | 342 (591)** | 1             | .835 (.890)** | .749 (.836)**   |
|                   | Sig. (2-tailed)     | .000        |               | .000          | .000            |
|                   | Ν                   | 354 (52)    | 355           | 355 (52)      | 352 (51)        |
| Response/Pleasure | Pearson Correlation | 227 (477)** | .835 (.890)** | 1             | .880 (.902)**   |
|                   | Sig. (2-tailed)     | .000        | .000          |               | .000            |
|                   | Ν                   | 355 (52)    | 355 (52)      | 356           | 353 (51)        |
| Shopping Intent   | Pearson Correlation | 227 (473)** | .749 (.836)** | .880 (.902)** | 1               |
|                   | Sig. (2-tailed)     | .000        | .000          | .000          |                 |
|                   | Ν                   | 352 (51)    | 352 (51)      | 353 (51)      | 353 (51)        |

### Correlations: Arousal, Comfort, Response, and Behavioral Intent

\*\*. Correlation is significant at the 0.01 level (2-tailed).

( ). Values under no-sound condition.

# Table 2. Arousal effects on Comfort, Response, and Behavioral Intent) Linear vs. Quadratic – this is based on Correlation

### Regression Model Summary (Linear vs. Quadratic) Arousal to Comfort, Response and Behavioral Intents

|           |          |           |                   |        |          |                                |                  | Change |     |     |        |                                       |
|-----------|----------|-----------|-------------------|--------|----------|--------------------------------|------------------|--------|-----|-----|--------|---------------------------------------|
| Dependent | t        |           |                   | R      | Adjusted | Std. Error of                  | rror of R Square |        |     |     | Sig. F | ANOVA                                 |
| Variable  |          | Model     | R                 | Square | R Square | R Square the Estimate Change C |                  | Change | df1 | df2 | Change |                                       |
| Comfort   | All Case | Linear    | .342ª             | .117   | .115     | 1.19527                        | .117             | 46.746 | 1   | 352 | .000   | F (1,352) =46.75, p<.001 <sup>a</sup> |
|           |          | Quadratic | .381 <sup>b</sup> | .145   | .140     | 1.17800                        | .028             | 11.393 | 1   | 351 | .001   | F (2,352) =29.76, p<.001 <sup>b</sup> |
|           | No       | Linear    | .591ª             | .349   | .336     | 1.10624                        | .349             | 26.781 | 1   | 50  | .000   | F (1,50) =26.78, p<.001 <sup>a</sup>  |
|           | Sound    | Quadratic | .646 <sup>b</sup> | .418   | .394     | 1.05652                        | .069             | 5.817  | 1   | 49  | .020   | F (2,49) =17.59, p<.001 <sup>b</sup>  |
| Response  | All Case | Linear    | .227ª             | .052   | .049     | 1.38359                        | .052             | 19.199 | 1   | 353 | .000   | F (1,353) =19.20, p<.001 <sup>a</sup> |
|           |          | Quadratic | .307 <sup>b</sup> | .094   | .089     | 1.35384                        | .043             | 16.683 | 1   | 352 | .000   | F (2,352) =18.37, p<.001 <sup>b</sup> |
|           | No       | Linear    | .477ª             | .228   | .212     | 1.40270                        | .228             | 14.755 | 1   | 50  | .000   | F (1,50) =14.76, p<.001 <sup>a</sup>  |
|           | Sound    | Quadratic | .545⁵             | .297   | .269     | 1.35175                        | .069             | 4.840  | 1   | 49  | .033   | F (2,49) =10.36, p<.001 <sup>b</sup>  |
| Shopping  | All Case | Linear    | .227ª             | .052   | .049     | 1.31350                        | .052             | 19.046 | 1   | 350 | .000   | F (1,350) =19.05, p<.001 <sup>a</sup> |
| Intent    |          | Quadratic | .307 <sup>b</sup> | .094   | .089     | 1.28557                        | .042             | 16.372 | 1   | 349 | .000   | F (2,349) =18.13, p<.001 <sup>b</sup> |
|           | No       | Linear    | .473ª             | .223   | .208     | 1.14594                        | .223             | 14.096 | 1   | 49  | .000   | F(1,49) =14.10, p<.001 <sup>a</sup>   |
|           | Sound    | Quadratic | .601 <sup>b</sup> | .361   | .334     | 1.05018                        | .138             | 10.343 | 1   | 48  | .002   | F (2,48) =13.66, p<.001 <sup>b</sup>  |

a. Predictors: (Constant), Mean: Perceived Arousal

b. Predictors: (Constant), Mean: Perceived Arousal, Arousal Squared

### Figure 2. Linear vs. Quadratic Function of Arousal on Comfort



Arousal to Comfort: Linear vs. Quadratic Effect (All Case)



4.00 Mean: Percieved Arousal

5.00

6.00

7.00

1.00

2.00

3.00

# Table 3. Model Prediction: Comfort + Arousal (Quadratic) to Response; Comfort to Response & Response to Shopping Intent

### Regression Model Summary Comfort to Response, Response to Shopping Intent

|                |                   |          |          |               | (All Cases | 5)       |     |     |        |   |
|----------------|-------------------|----------|----------|---------------|------------|----------|-----|-----|--------|---|
|                |                   |          |          |               |            | Change S |     |     |        |   |
|                |                   |          | Adjusted | Std. Error of | R Square   |          |     |     | Sig. F | ANOVA   |
| Model          | R                 | R Square | R Square | the Estimate  | Change     | F Change | df1 | df2 | Change |   |
| 1 <sup>a</sup> | .835°             | .698     | .697     | .78164        | .698       | 814.691  | 1   | 353 | .000   | <i>F</i> (1,353)=814.69, <i>p</i> <.001 <sup>c</sup>  |
| 2 <sup>b</sup> | .880 <sup>d</sup> | .774     | .773     | .64111        | .774       | 1200.211 | 1   | 351 | .000   | <i>F</i> (1,351)=1200.21, <i>p</i> <.001 <sup>d</sup> |

(No Sound Condition)

| 1 <sup>a</sup> | .890°             | .793 | .789 | .72649 | .793 | 191.404 | 1 | 50 | .000 | <i>F</i> (1,49)=214.931, <i>p</i> <.001 <sup>c</sup> |
|----------------|-------------------|------|------|--------|------|---------|---|----|------|--|
| 2 <sup>b</sup> | .902 <sup>d</sup> | .814 | .811 | .56030 | .814 | 214.931 | 1 | 49 | .000 | <i>F</i> (1,49)=214.931, <i>p</i> <.001 <sup>d</sup> |

#### **Comfort + Arousal to Response**

|                | (All Cases)       |      |      |        |      |         |   |     |      |  |  |  |  |  |  |
|----------------|-------------------|------|------|--------|------|---------|---|-----|------|--|--|--|--|--|--|
| 1 <sup>a</sup> | .835°             | .697 | .696 | .77984 | .697 | 810.889 | 1 | 352 | .000 | <i>F</i> (1,352)=810.89, <i>p</i> <.001°             |  |  |  |  |  |
| 2 <sup>a</sup> | .837°             | .701 | .699 | .77651 | .003 | 4.027   | 1 | 351 | .046 | <i>F</i> (2,351)=410.94, <i>p</i> <.001 <sup>e</sup> |  |  |  |  |  |
| 3 <sup>a</sup> | .840 <sup>f</sup> | .705 | .702 | .77236 | .004 | 4.784   | 1 | 350 | .029 | <i>F</i> (3,350)=278.51, <i>p</i> <.001 <sup>f</sup> |  |  |  |  |  |

|                | (No Sound Condition) |      |      |        |      |         |   |    |      |  |  |  |  |  |  |
|----------------|----------------------|------|------|--------|------|---------|---|----|------|--|--|--|--|--|--|
| 1 <sup>a</sup> | .890°                | .793 | .789 | .72649 | .793 | 191.404 | 1 | 50 | .000 | <i>F</i> (1,50)=191.40, <i>p</i> <.001°            |  |  |  |  |  |
| 2 <sup>a</sup> | .892°                | .796 | .788 | .72742 | .004 | .871    | 1 | 49 | .355 | <i>F</i> (2,49)=95.89, <i>p</i> <.001 <sup>e</sup> |  |  |  |  |  |
| 3 <sup>a</sup> | .893 <sup>f</sup>    | .797 | .784 | .73432 | .000 | .084    | 1 | 48 | .773 | <i>F</i> (3,48)=62.76, <i>p</i> <.001 <sup>f</sup> |  |  |  |  |  |

a. Dependable Variable: Pleasure

b. Dependable Variable: Shopping Intent

c. Predictors: (Constant), Comfort

d. Predictors: (Constant), Pleasure

e. Predictors: (Constant), Comfort, Arousal

f. Predictors: (Constant), Comfort, Arousal, Arousal Squared

#### **Regression Model Prediction**

Pleasure (Response, All case) = .062 + .93(Comfort), R<sup>2</sup> = .698Behavior (Shopping Intent, All case) = .31 + .84(Response/Pleasure), R<sup>2</sup> = .774Pleasure (Response, All Case) = -.885 + .941(Comfort) + .409(Arousal) - .041(Arousal x Arousal), R<sup>2</sup> = .705

Pleasure (Response, No Sound) = -.27 + 1.04(Comfort), R<sup>2</sup> = .793Behavior (Shopping Intent, No Sound) = .89 + .74(Response/Pleasure) R<sup>2</sup> = .814

Pleasure (Response, No Sound) = -1.109 + 1.079(Comfort) +.217(Arousal) -.015(Arousal x Arousal), R<sup>2</sup> = .797

Scholarship of Design Research | Practice | Presentation

# Portfolio Development: Necessary Steps to Creating a Successful Student Portfolio

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## ABSTRACT

The interior design profession has been around for decades, expanding in professional growth from the early 1900's until present time. With the formation of the Foundation for Interior Design Education Research (FIDER) and National Council for Interior Design Qualification (NCIDQ) in the 1970's, interior design had slowly become an accredited profession. Students studying interior design prepare presentations of their designs, that include examples of progressive work as a design student. These designs are displayed in a portfolio, which represents what a student has to offer as an interior designer. The details of assembling a portfolio can be critical, therefore many colleges and universities, offer instructional credit to teach these skills. A portfolio is how an interior designer showcases their skills, style, and qualifications, and has been a key aspect of the interior design hiring process. For newly graduated Interior Designers, having a professional portfolio is key to getting a job after college. This study aims to define what a successful portfolio is, and how students can best achieve a successful portfolio. To gain an in-depth understanding of how a portfolio is used in the interview process, as well as critical elements that should be included in a student portfolio, we conducted research in two categories: (1) recent graduates of CIDA accredited universities and (2) design professionals. First, to gather information from the recent graduates, we sent out a questionnaire, hereby referred to as the Student Questionnaire, using the Google Forms software program. The questionnaire featured ten questions, ranging from their current role within their company, to construction of their student portfolio, to their hiring process. The survey was completed by 25 people who had graduated from a CIDA accredited interior design program and acquired a job within the last three years (Graduation Date of May 2019 or later). This survey

allows us to evaluate students' needs when constructing a portfolio and make curriculum recommendations for educators teaching portfolio development courses. Second, another questionnaire, hereby referred to as the Professional Questionnaire, was given to 12 professionals. The professionals were asked seven questions, ranging from what they look for in a potential candidates resume and portfolio to how students can best showcase their talents within their student portfolio. Communicating through email, we interviewed the 12 professionals in the Interior Design field that are actively involved in the hiring process. This survey allows us to evaluate what companies consider when reviewing a student portfolio. After reviewing the data gathered from the questionnaires, we were able to create a five-step program to guide students as they create their portfolio and help them acquire an interior design position. Each interior design student has their own unique perspective of the design world - one that should be highlighted within their portfolio. Therefore, by understanding how employers evaluate a portfolio and ways in which the student can highlight their own skills, the student will be able to create a meaningful portfolio that will serve them well as they begin their job search.

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- I. Introduction
  - a. Explains the historical role of the interior design portfolio in the hiring process.
  - b. Defines what a portfolio is, and why it is important for students to develop a portfolio
- II. Literature Review
  - a. Reviews information found in journal articles, blogs, and job postings relevant to our research
- III. Research Question
  - a. How can a student best develop a portfolio that leads to successful job acquisition?
  - b. Provides information on how we began our research (introduced methodology)
- IV. Methodology
  - a. In-depth look at how we conducted our research
  - b. Student Questionnaire
    - i. Gathered responses from 25 recent graduates (graduated from a CIDA accredited program within the last three years) using google forms
    - ii. Featured ten questions, both about their interior design background and their portfolio development process.
  - c. Professional Questionnaire
    - i. Gathered responses from 12 professionals, conducted through email
    - ii. Featured seven questions pertaining to what each professional looks for when evaluating a portfolio.
- V. Student Questionnaire
  - a. The following questions were given to recent graduates:
    - i. What is your current job title/role?
    - ii. What is your experience in the interior design industry?
    - iii. What was your undergraduate experience like, and how did that impact your design process?
    - iv. What was the interview process like for your current role?
    - v. What role did your portfolio play in your job search?
    - vi. Did you receive feedback on your portfolio? If so, what feedback did you get from design professionals?
    - vii. What were you aiming to showcase most in your portfolio?
    - viii. When you were building your portfolio, where did you turn for advice?
    - ix. In what areas did you wish you had more guidance while developing your portfolio?
      - x. What was the best piece of advice you received regarding your portfolio, and who gave you that advice?
  - b. Recent Graduate Background Results (Questions 1-2)
    - i. Most of those who responded were in the residential design field.
    - ii. There was a wide range of job titles given, across a full spectrum of the design industry.
    - iii. Most participants noted that they had some previous experience in the industry, either from an internship or a full-time position.
  - c. Recent Graduates Undergraduate Experiences (Question 3)
    - i. Many participants noted that an understanding of codes and construction processes were most beneficial to them.



- ii. Participants also noted that it was beneficial to develop technical design skills while in school, as well as personal skills, such as time-management and organization.
- d. Recent Graduates' Interview Processes (Questions 4-6)
  - i. Despite the pandemic, most recent graduates still attended an in-person interview.
  - ii. Most participants noted that their portfolio only played a small role in their hiring process; rather, communication skills in their interview were deemed more important.



- iii. Only 66% of participants claim to have received feedback on their portfolio. However, those who got feedback noted some great tips that they were able to implement moving forward.
- e. Developing a Student Portfolio (Questions 7-10)
  - i. Most participants wanted to highlight their computer software knowledge in their portfolio.



- ii. The data suggest students turn to a wide variety of sources when looking for advice, each of which are relatively evenly matched.
- iii. The recent graduated noted that they would have liked more help in several areas when developing their portfolio. Most notably, they wanted guidance on what to include in their portfolio.



- iv. Highlight pieces of advice the recent graduates found most useful.
- f. Summation
  - i. On job acquisition:
    - 1. Many students cited having an internship on their resume as a key factor in helping them find a job.
    - 2. Both technical skills and creative ability are important, as different companies have different expectations
  - ii. On Portfolio Building:

- 1. Professors, Peers, and Online Examples are where most students turned for advice.
- 2. A portfolio needs to showcase your software skills, design solutions, and personal aesthetic
- 3. Treat yourself like a brand make sure your portfolio showcases all talents that are unique to you and that your personality shines through.
- VI. Professional Questionnaire
  - a. The following questions were given to design professionals:
    - i. What are the primary criteria for assessing a portfolio?
    - ii. When selecting potential job candidates to interview, at any level, what are some specifics you look for in a portfolio?
    - iii. What are the top 4 skills you look for when assessing a portfolio?
    - iv. Do you prefer to receive a candidate's portfolio through an online link, a PDF file, or as a hard copy? Explain.
    - v. How does creativity and merit affect your overall assessment of a job candidates' portfolio?
    - vi. Is there anything else besides a resume and a portfolio that your company requires when applying for a job?
    - vii. Is there any advice you would give to a new graduate that is preparing their portfolio for the first time?
    - b. Defining Design Professionals
      - i. Provides our definition of Architecture firms, Interior Design Firms, Residential and Commercial Builders, Boutique Interior Design Companies, and Specialty Design Areas
    - c. Criteria Considered When Evaluating a Portfolio (Questions 1-4)
      - i. Process of design, clean presentation, concept development, computer skills, personal design style, artistic ability.
      - ii. Sample Chart:



- iii. Top four skills design professionals look for in a portfolio
  - 1. Most participants noted technical skills to be an important element to a portfolio.
    - 2. Sample Chart:



- 3. We then compare these skills across the different types of interior design practices.
- iv. Most design professionals prefer a form of digital portfolio either a web link or a PDF file. Only 13% of participants noted that they preferred a hard copy.
- d. Creativity and Merit VS. Creativity and Skill (Question 5)

- i. Creativity makes a designer a better problem solver, connect with the community, and bring self-awareness and expression to their designs.
- ii. **MERIT** is representing a high quality of work associated with a certain style worthy of praise. **SKILL** is to use one's knowledge effectively to do something well.
- iii. Creativity assists designers' capability to think a project through with their best self forward.
- iv. Creativity and merit can be effective when a design has a realistic concept.
- v. A functional and skilled design is more essential than a creative design.
- vi. Creativity cannot exist if the overall execution of the drawings is poor.
- vii. Execution of design skills and visual presentation can override creativity.
- viii. Creativity and merit are a key component to understanding what makes you different from another designer.
- e. Additional Factors in Securing a Job (Question 6)
  - i. Most participants noted that an having an internship on a resume was a major factor in selecting who to interview.



- f. Advice from the professionals:
  - i. Highlighting the best pieces of advice from the professionals.
- g. Summation
  - i. The professionals are consistent in some of the top skills they look for in a portfolio: creativity, technical skills, consistency / organization, and communication concepts.
  - ii. Make sure to clearly communicate and showcase your projects. When you are reviewing projects in your portfolio, remember to speak clearly, as if telling a story.
  - iii. Make sure to know what company you are interviewing with and what type of design they conduct. If possible, include familiar designs in your portfolio.
- VII. Comparison between the Professionals, Students, and Literature Studied

#### a. Similarities

- i. Everyone had similar thoughts on the skills that should be included, such as AutoCAD, SketchUp, Revit, and the Adobe Creative Suite
- ii. Details are important make sure that your spelling and grammar are correct throughout your resume and portfolio.
- iii. Make sure that you are communicating clearly visually, verbally, and in writing.
- iv. Your portfolio should be well organized, with each project having a specific purpose.
- b. Differences
  - i. Olga Sorokina (2020) wrote, "Focus on quantity over quality." the professionals we spoke with, as well as other articles we read, disagreed.
  - ii. Verbal contact communication for Jobs was valued among smaller companies, while a larger company might prefer you follow their online application process.
  - iii. Displaying trendy vs. creative design.
  - iv. Code knowledge was never mentioned with professionals.

#### VIII. Five Steps to an Effective Portfolio

- a. Based on the data collected, we have developed a five-steps-to-success program for students building a portfolio.
  - i. Show off your design technique and digital ability
  - ii. Communicate clearly

- iii. Organization
- iv. Edit, edit, and then edit again
- v. Showcase who you are as a designer.

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## Scholarship of Design Research | Practice | Presentation

# The Influence of Colored Lighting on Spatial Impression

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### ABSTRACT

The influence of indoor color and lighting on various physiological and psychological effects such as heart rate, skin conductance, emotion, and impression are still ongoing (Kaufman, 2003; Tantanatewin, & Inkarojrit, 2016). While color and lighting have each been documented as factors influencing people's lives, more recent studies have indicated the effects of the colored lighting (Laufer et al., 2009; Odabaşioğlu & Olguntürk, 2015) and the effort to discover the colored lighting effects needs to be continued. The purpose of this study is to explore the effects of six different colored lightings (i.e., red, green, blue, yellow, orange, and purple) on spatial impressions (i.e., cheerfulness, attractiveness, comfort, pleasantness, relaxation, and warmness/coolness) and to provide guidelines of colored lighting application for interior design professionals. Stimulus-Organism-Response (SOR) theory, introduced by Mehrabian and Russell (1974), is used as a theoretical background. Based on the SOR model, it is hypothesized that six different colors of lighting have significant effects on spatial impression. Experimental research was employed to test the hypotheses. The experiment was performed in the Sensory Laboratory with individual booths with color changing LED lighting fixtures at the top of each booth (see Figure A1). Total 101 participants were recruited by voluntary sampling through an online recruitment tool. To evaluate the spatial impressions, six adjective pairs based on the Tantanatewin and Inkarojrit's study (2016) were selected (see Figure A2). Analysis of variance (ANOVA) was conducted to test the hypotheses (see Table A1). The findings of the study proved that there are significant effects of colored lightings on spatial impressions. Blue lighting was found to be the most comforting and pleasant lighting while red lighting significantly lowers the spatial impression in terms of attractiveness, comfort, and pleasantness. Red lighting was also significantly low in relation to spatial impression of relaxation while yellow lighting was found

to be the most cheerful lighting color. In terms of warmness and coolness, significant differences were found among all six colors of lightings. Red, yellow, and orange lightings provide the impression of warmness to the space while blue, green, and purple provide the impression of coolness to the space. This finding shows similarity in warmness and coolness of surface color. The practical application from the results of this study could be; 1) blue lightings are recommended in places that require a comforting and pleasant impression, 2) yellow lightings could be used in the spaces to provide cheerfulness to the space, 3) red lightings are the least recommended lighting color if the designer wants to create comforting, pleasant, attractive, or relaxing spaces, 4) red, orange, and yellow lightings are suggested in a space where a warm atmosphere is needed while blue, green, and purple lightings are good for a space where creation of cool atmosphere is required. The findings of this research expect to contribute to the body of knowledge on color and lighting literature. Theoretically, it is expected to provide greater insight into the application of the SOR model. Practically, it is expected to provide the basis for developing practical guidelines of colored lighting application for interior design professionals, and to help the appropriate use of colored lighting to general public as well as design experts.

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# Appendix A

Figure 1.

Individual Booth with Six Lighting Colors



# Figure 2.

# Questionnaire Used in the Experiment

|              |   |   | • • |   |   |   |   |              |
|--------------|---|---|-----|---|---|---|---|--------------|
| Warm         | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Cool         |
| Dull         | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Bright       |
| Impressive   | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Unimpressive |
| Beautiful    | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Ugly         |
| Unattractive | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Attractive   |
| Cheerful     | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Gloomy       |
| Unappealing  | 1 | 2 | 3   | 4 | 5 | 6 | 7 | Appealing    |
|              |   |   |     |   |   |   |   |              |

#### Please rate your overall impression of the lighting condition.

### Table 1.

|                |        | n  | М    | SD   |  |
|----------------|--------|----|------|------|--|
|                | Red    | 50 | 3.88 | 1.65 | 6  |
|                | Green  | 55 | 4.47 | 1.32 | 5.5                                      |
| c1 0.1         | Blue   | 61 | 4.33 | 1.69 | 5  |
| Cheerfulness   | Yellow | 58 | 4.98 | 1.68 |  |
|                | Orange | 53 | 4.15 | 1.94 | 3.5                                      |
|                | Purple | 62 | 3.95 | 1.54 | 3<br>Red Green Blue Yellow Drange Purple |
|                |        |    |      |      |  |
|                | Red    | 50 | 3.72 | 1.69 | 6  |
|                | Green  | 55 | 4.47 | 1.35 | 5.5                                      |
| A              | Blue   | 61 | 5.00 | 1.54 | 45                                       |
| Attractiveness | Yellow | 58 | 4.81 | 1.62 |  |
|                | Orange | 53 | 4.53 | 1.54 | 3.5                                      |
|                | Purple | 62 | 4.61 | 1.75 | 3 Red Green Blue Yellow Orange Purple    |
|                |        |    |      |      |  |
|                | Red    | 50 | 3.26 | 1.66 | 6  |
|                | Green  | 55 | 4.75 | 1.64 | 5.5                                      |
| Comfort        | Blue   | 61 | 5.43 | 1.51 | 4.5                                      |
| Connort        | Yellow | 58 | 4.88 | 1.69 | 4  |
|                | Orange | 53 | 4.51 | 1.75 | 3.5                                      |
|                | Purple | 62 | 4.29 | 1.92 | .3 Red Green Blue Yellow Orange Purple   |

Means and Standard Deviations of Spatial Impressions for Lighting Colors

|              |        | n  | М    | SD   |  |
|--------------|--------|----|------|------|--|
|              | Red    | 50 | 3.34 | 1.79 | 6  |
|              | Green  | 55 | 4.75 | 1.54 | 5.5                                      |
| DI           | Blue   | 61 | 5.67 | 1.54 | 45                                       |
| Pleasantness | Yellow | 58 | 5.10 | 1.63 | 4  |
|              | Orange | 53 | 4.66 | 1.61 | 3.5                                      |
|              | Purple | 62 | 4.58 | 2.02 | 3<br>Red Green Blue Yellow Orange Purple |
|              |        |    |      |      |  |
|              | Red    | 50 | 2.74 | 1.58 | 6.5                                      |
|              | Green  | 55 | 4.18 | 1.83 | 5.5                                      |
|              | Blue   | 61 | 4.72 | 1.86 | 45                                       |
| Relaxation   | Yellow | 58 | 4.24 | 1.98 | 35                                       |
|              | Orange | 53 | 4.04 | 1.70 | 3  |
|              | Purple | 62 | 4.31 | 1.80 | 2<br>Red Green Blue Yellow Orange Purple |
|              |        |    |      |      |  |
|              | Red    | 50 | 2.50 | 1.56 | 6.5                                      |
|              | Green  | 55 | 4.25 | 1.47 | 5.5                                      |
| Warmness/    | Blue   | 61 | 6.03 | 1.34 | 45                                       |
| Coolness     | Yellow | 58 | 3.16 | 1.76 | 3.5                                      |
|              | Orange | 53 | 2.17 | 1.12 | 3 25                                     |
|              | Purple | 62 | 4.61 | 1.81 | 2<br>Red Green Blue Yellow Orange Purple |

Means and Standard Deviations of Spatial Impressions for Lighting Colors (cont.)

Note. Means ranged from 1 to 7, with higher numbers representing more positive impression. M = mean. SD = Standard Deviation.

# Introducing Workplace Design Assessment Criteria for Enhancing User's Wellness During the Pandemic

Yongyeon Cho, Iowa State University Huiwon Lim, Penn State University

## ABSTRACT

The pandemic has changed people's lifestyles, especially in the workplace. Some companies have already been considering new workplace designs and environments for the post-pandemic (Kane et al., 2021). Recent studies have shown that workplace design elements can enhance employees' well-being and productivity (Chau et al, 2013, Sadick & Kamardeen, 2020). Accordingly, designers, real estate consultants, and building owners have been trying to create safe and mindful office environments that could support employees' physical, emotional, and social wellness (ASID, n.d.) through evidence-based guidelines, toolkits, and rating systems (Hartman, 2015). However, many existing rating systems have challenges due to the use of complexity (e.g., interface), and guidelines may be hard to fully support users' awareness of design elements. It is because all elements are weighted equally without hierarchies even though some elements are more critical than others. Therefore, the current research focuses on developing inclusive and comprehensive wellness design assessment criteria for creating physical, emotional, and social wellness office environments. This research introduces 1) 20 evidence-based office design features for improving office workers' wellness, and 2) assessment criteria founded through the user survey results. This research used a mixed-method, combining qualitative and quantitative analysis together. The study conducted qualitative content analysis to identify design elements through reviewing existing design evaluation tools, guidelines, and design-rating systems. The selected guidelines including WEEL V1, Active design guidelines, and the Centers for Disease Control and Prevention worksite health scorecard were reviewed to filter criteria related to office-design settings and user-wellness experiences. Then, the filtered

criteria were developed with a set of 20 design features (see Table 1), which are Fresh & clean & movement of air, Temperature & humanity, Lighting, Safety & Security, Infection control, Maintenance, User control environments, Space planning, Privacy, Signage, Accessibility, Nutrition, Indoor activity, Outdoor activity, Health-related information, Natural elements, Auditory appealing, Visual appealing, Personal supports, and Community supports, and they classified by three categories: technical, functional, and aesthetic. We also developed 20 diagrams (see Figure 1) to help assessors' better understanding of the features. Based on the reviewed results, we conducted an online survey through Amazon Mechanical Turks to investigate office workers' wellness experiences and expectations of their work environment setting in this pandemic. A total of 300 participants who have physical office environment experience in the United States during their pandemic were recruited and asked their perceptions on the 20 design features related to the physical, emotional, and social well-being of workplace environments. The results revealed that all the 20 design features impacted users' wellness in their workplace. Specifically, Fresh & clean & movement of air, Infection control, temperature & humidity, safety & security, and privacy were ranked as the top five design features that participants perceived importance of the 20 design features in order. The technical category is the most important category among the three categories. Descriptive statistical results will be used to create the real-time assessment tool in future research. Our findings could help stakeholders to discover design elements for improving the office environments. Designers also could use this wellness design assessment criteria as a checklist or a design reference during their design process. The findings of this research would provide benefits to analyze offices' wellness design elements during or after the pandemic.

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# Appendix

Table 1. 20 design features and the summary of each feature's description results from qualitative content analysis

| DESIGN<br>CRITERIA |    | DESIGN FEATURES                    | SUMMARY OF DETAILS  |
|--------------------|----|------------------------------------|---|
|                    | 01 | FRESH & CLEAN<br>& MOVEMENT OF AIR | Incorporate natural ventilation, Indoor smoking ban. Provide well-maintained HVAC and air filtration. No mold found on-<br>sife. Consider moisture absorption management for building materials. Offer walk-off entry systems. Provide real-time<br>display-Carbon dioxide concentration. Provide a displacement ventilation system. Ban heater combustion application.<br>Offer separate chemical storage. |
| -                  | 02 | TEMPERATURE &<br>HUMANITY          | Provice entryway air seal with entry vestibule, revolving coor, or at least three shut doors that separate occupied space<br>from the outdoors. Maintain a relative humidity between 30% to 50%. Provide real-time display-Temperature and<br>humidity. Provide personal thermal comfort devices. At least 50% free address to allow occupants to select a workspace  |
| NICA               | 03 | LIGHTING                           | Consider brightness contrast management strategies. Provide melanopic lighting intensity for the work area. Maintain<br>daylight management - Interior window shading, blinds, or external shading systems (canopies or awning) that are<br>controllable to prevent place. Provide a film of micro-mirrors on the window that reflect surlight toward the ceiling.  |
| TECH               | 04 | SAFETY & SECURITY                  | Design safe stairs - provide slip resistant floor finishes, color or textural contrasts at tread nosings. Offer access to a<br>training course on CPR and use of AED. Place AEDs in place. Appliance and heater combustion ban. Separate chemical<br>storage.   |
|                    | 05 | INFECTION CONTROL                  | Offer a cleaning plan for occupied spaces. No mole found. All food is stored in sealed containers. All indoor garbage cans have lids and hands free operation. High touch surfaces cleaned with the UV cleaning device. High-touch surfaces are finished to maintain smooth welds and ignts. High touch analyzing device. Frowide Handwashing supplies (hand space)   |
|                    | 06 | MAINTANCE                          | The HVAC system has or is scheduled for testing and balancing. Air filtration maintained properly as per the manufacturer's recommendations. Properly maintain walk-off entryway systems. Appropriate cleaning plan for occupied spaces. Consider the high cleanability of design.  |
|                    | 07 | USER CONTROL<br>ENVIRONMENTS       | Provice various programs(drinking fountains, restrooms, high visible staircase, multiple entries, break area furnishing,<br>eating spaces, exercise equipment) that support increased frequency and duration of walking. Encourage personal<br>interaction, full controllability of window, lighting, desk height, workstations, and personal thermal comfort devices.                                      |
|                    | 08 | SPACE PLANNING                     | Focus on stairs as the principal of vertical travel. Design stairs with interesting views. Locate elevators out of direct view<br>from the building's entrance. Consider installing skip-stop elevators. Consider locating the principal building lobby<br>functions on the second floor. Provide separate chemical storage, free address workstation, high ceiling height, and eating                      |
|                    | 09 | PRIVACY                            | Provice a private space that may be used by an employee. Provide a dedicated space that is quiet where employees can<br>engage in relaxation activities. Provide sound masking system were it necessary, private space is minimum 75 sqft. Noise<br>criteria is 30 or lower, and Ambient lighting.  |
| NAL                | 10 | SINGAGE                            | Place signage at elevators and escalators to encourage stair use, Design informational and motivational messages to be<br>logistically and culturally appropriate to the building's users (multilingual, age-appropriate messages), Provide incremental<br>distance markers.  |
| CTIO               | 11 | ACCESSIBILITY                      | Designate parking for people with disabilities. Make path, stair, and sink universally accessible - smooth, sufficiently wide.<br>Locate an appealing, visible stair directly on the building's principal path of travel. Limit the use of elevators and escalators<br>in buildings. Provide supportive infrastructure along walking routes - restrooms, benches, movable chairs & tables, AEDs,            |
| FUN                | 12 | NUTRITION                          | Provice drinking fountains that support increased frequency and during walking in the building. Provide a place to<br>purchase and eat food and beverage. Identify healthier food and beverage choices with signs or symbols. Provide<br>employees with food preparation, cooking tools, eating utensils, and storage facilities. Provide a visual display of holding                                       |
|                    | 13 | INDOOR ACTIVITY                    | Encourage to choose a building including indoor activity spaces, exercise facilities, fitness programs, cardiorespiratory and muscle-strengthening exercise equipment, Standing cesks, and free accress workstations. Provide stairs in a building for everyday use (locate near the building entrance, an appealing cesien-bright, inviting colors, make wide enough to                                    |
|                    | 14 | OUTDOOR ACTIVITY                   | Locate building near public transit and bicycling. Provide signage showing a map and distance, time, route, and calories<br>burned to the nearest or next transit stop. Consider building location near exercise facilities, walking paths, open spaces,<br>activity spaces, supermarkets, parks, plazas, farmers' markets, public art, eardens, or other landscaped elements, Provide                      |
|                    | 15 | HEALTH RELATED                     | Provice information about walking routes within and around the building, incremental cistance markers, and signage about facilities, services, and groups related to physical activities. Provide brochures, viceos, posters, pamphlets, newsletters, or other written or online information that address the benefits of healthy eating, physical activity, using to                                       |
|                    | 16 | NATURE ELEMENTS                    | Provide views to the outdoor from physical activity rooms. Provide operable windows that provide access to outdoor air<br>and daylight. Consider window access and size for workstations. Incorporate outdoor biophilia plan (gardening space,<br>rooftop garden, tree canopies), and indoor biophilia plan (potted plants, a plant wall). Previde water features or water                                  |
| Ľ                  | 17 | AUDITORY APPEALING                 | Design stair environments that appeal to the senses by adding music to stairwells. Encourage more pedestrian activity with water features. Provide acoustic planning - separating loud and quiet zones.   |
| STHE               | 18 | VISUALLY APPEALING                 | Design elements can be used to way-finding, aid in orientation, and provide spatial familiarity. Integrate artwork into<br>interior space. Incorporate Biophilia, nature's pattern throughout the design. Provide a design that supports human<br>delight, culture, spirit, and place. Incorporate daylight, view to outside, artwork, music, and biophilic elements in common                              |
| AE                 | 19 | PERSONAL SUPPORTS                  | Encourage personal interaction in addition to e-communication. Provide flexible work scheduling policies. Provide<br>dedicated space support relaxation activity or physical activity. Provide breast pumps at the worksite. All nursing mothers<br>with break times of at least 15 minutes, every 3 hours. Support workplace sleep. Occupants have access to personal                                      |
|                    | 20 | COMMUNITY<br>SUPPORTS              | Locate building near farmers' market or full-service grocery stores, open space that employees can access within a ten-<br>minute walk. Create partnerships with organizations to sponsor and maintain green spaces and gardens. Employer<br>supported child care and family support paid sick time for the employee's family.  |



Figure 1. 20 visual diagrams illustrate the 20 design features and these details

| Catagories  | -                                       | TECHNICAL |          |          |                      |           |                                     |       |        | F       | UNCTIO       | VAL      |      |         |                                | AESTHETIC |          |                    |      |                      |
|---|---|-----------|----------|----------|----------------------|-----------|-------------------------------------|-------|--------|---------|--------------|----------|------|---------|--------------------------------|-----------|----------|--------------------|------|----------------------|
| Design elements   | FRESH &<br>T AN #<br>MOVEMENT<br>DE AIR | URE &     | instance | SAFETY & | INFECTION<br>CONTROL | MAINTANCE | USER<br>CONTROL<br>ENVIRONME<br>NIS | SPACE | PRIVAC | SILINAL | ACCESSIBILIT | NUTSTOON |      | OUTEOO? | HEALTH<br>RELATED<br>INSORMATI | NATLRE    | AUDITORY | VISUAL<br>APPEAL N |      | COMMUNITY<br>SUPPORT |
| Mean value of<br>Importance of each<br>design element (Max 5)                       | 4.23                                    | 4.15      | 4.05     | 4.15     | 4.16                 | 4.03      | 4.06                                | 3.93  | 4.12   | 3.76    | 4.05         | 4.04     | 3.82 | 3.84    | 3.95                           | 3.69      | 3.80     | 3.90               | 3.97 | 3.93                 |
| Mean value of<br>Importance of each<br>category (Max 5)                             |   | 4.13      |          |          |                      |           | 3.95                                |       |        |         |              |          | 3.90 |         |                                |           |          |                    |      |                      |
| Mean value of impact<br>on Physical well-being<br>of each design element<br>(Nex 4) | 3.28                                    | 3.24      | 3.05     | 3.23     | 3.25                 | 3.11      | 3.16                                | 3.06  | 3.10   | 2.99    | 3.13         | 3.23     | 3.09 | 3.15    | 3.15                           | 3.07      | 3.01     | 2.97               | 3.12 | 3.06                 |
| Mean value of Impact<br>on Physical well-being<br>of each category<br>(Max.4)       |   |           | 3        | 1.19     |                      |           |                                     |       |        |         | 3.12         |          |      |         |                                |           |          | 3.05               |      |                      |
| Mean value of impact<br>on Emotional health of<br>each design element<br>(Max 4)    | 3.24                                    | 3.23      | 3.14     | 3.24     | 3.16                 | 3.15      | 3.16                                | 3.07  | 3.26   | 3.02    | 3.13         | 3.19     | 3.08 | 3.11    | 3.18                           | 3.17      | 3.15     | 3.12               | 3.20 | 3.19                 |
| Mean value of impact<br>on Emotional health of<br>each category<br>(Mas 4)          |   |           |          | 1.19     |                      |           |                                     |       |        |         | 3.13         |          |      |         |                                |           |          | 3.17               |      |                      |
| Mean value of impact<br>on Social interaction of<br>each design diement<br>(Max 4)  | 3.21                                    | 3.21      | 3.16     | 3.27     | 3.26                 | 3.22      | 3.25                                | 3.23  | 3.26   | 3.09    | 3.27         | 3.22     | 3.22 | 3.23    | 3.16                           | 3.22      | 3.14     | 3.18               | 3.23 | 3.24                 |
| Mean value of impact<br>on Social Interaction of<br>each category                   | 3.22                                    |           |          |          |                      | 3.21      |                                     |       |        | 3.20    |              |          |      |         |                                |           |          |                    |      |                      |

Figure 2. Online survey result - mean values of 20 design features and the three categories
# Organizational Assimilation Within the Interior Design Industry: Are Emerging Designers on Equal Footing?

Amy Huber, Florida State University Kelley Robinson, Florida State University

#### ABSTRACT

Design leaders stand at an inflection point as their employees adapt to the realities of an endemic COVID-19 workplace and reckon with the impacts of systemic social injustices. Against this backdrop, it would behoove leaders who seek to attract and retain top talent to identify those factors that foster the enculturation of their employees. While scholars in other fields note the importance of identifying the antecedents of organizational assimilation, little is known about this process in interior design. Context The process of acclimating and reducing an organizational newcomer's uncertainties is referred to as organizational assimilation (OA). Communications researchers Myers and Oetzel (2003) outlined six dimensions of OA: role negotiation, familiarity with others, organizational acculturation, recognition, involvement, and job competency. They theorized that OA varies based on the individual, their workplace, and environmental shifts, which one might infer would include the rapid uptake of remote work (WFH) prompted by a global pandemic. Some contend the effects of WFH may be especially pronounced on marginalized employees, not only among those from underrepresented groups, many of whom still face prejudice in the design industry (see Avenue M. Group, LLC., 2021), but also those absent of valuable professional networks (i.e., entry-level workers & organizational newcomers) (Bulger & Lombardi, 2020). As such, this research sought to identify those factors that foster or inhibit the assimilation of emerging interior designers into design firm settings. Methods The study utilized maximal variation, purposive sampling. Online survey invitations were distributed to emerging designers working in 140 design firms and a recent alumni list from an R1 university. The instrument ascertained tenure and demographics data and

used the Organizational Assimilation Index (OAI) (Gailliard, Myers, & Seibold, 2010) and Ragins and McFarlin's (1990) Mentor Role Instrument. Data were analyzed with One-way ANOVAs with Tukey Post Hoc tests, Pearson correlations, and linear regressions. Among the potential assimilation determinants tested were individual characteristics (e.g., demographics, duration of time at the firm (See Table 1) and contextual factors (i.e., firm size, market sector, communication strategies used during WFH, and the types of mentoring received). Conclusions Responses from 80 emerging designers revealed that firm size, market sector, tenure, and remote work communication tactics bore little influence on OA. That said, those from underrepresented groups felt significantly less assimilated F(1, 54) = 4.818, p = .032. In fact, they scored each OA category worse than their counterparts (Figure 1). Yet, 36% of the variation of OA scores was explained by the overall quality of mentorship received, F(1,35) = 19.94, p = <.001. Specifically, friendship (r = .49), coaching (r = .45), counseling (r = .44), acceptance (.43), and sponsorship (r= .43) were positively correlated to OA. Significance These findings offer exploratory, yet important insights regarding factors that may influence the organizational assimilation of emerging interior designers. More specifically, they underscore the valuable role of mentorship in assimilating new staff while lending empirical evidence to the potential consequences of a largely homogenous workforce on underrepresented employees.

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#### Appendix

#### Table 1

Participant Characteristics

|                         |   | Frequency   | Percent                          |
|-------------------------|---|---|----------------------------------|
| Most Recent Grad        | luation Year  |   |                                  |
|                         | 2020  | 9   | 11.3                             |
|                         | 2019  | 15  | 18.8                             |
|                         | 2018  | 16  | 20.0                             |
|                         | 2017  | 12  | 15.0                             |
|                         | 2016  | 7   | 8.8                              |
|                         | 2015 or before  | 21  | 26.3                             |
| *Market Sector          | Civic Government, Education, Aviation   | 11  | 20.8                             |
|                         | Health, Wellness, Senior Living   | 9   | 17                               |
|                         | Residential/Multifamily   | 8   | 15.1                             |
|                         | Restaurant/Hospitality/Entertainment  | 7   | 13.2                             |
|                         | Workplace   | 18  | 34                               |
| *Firm Size              | < 20 Designers  | 20  | 33.9                             |
|                         | 21-50 Designers   | 12  | 20.3                             |
|                         | > 50 Designers  | 27  | 45.8                             |
| *Title                  | Jr. Designer or Architect   | 13  | 22.0                             |
|                         | Interior Designer or Architect  | 26  | 44.1                             |
|                         | Project Coordinator   | 2   | 3.4                              |
|                         | Other (if other, please specify)  | 18  | 30.5                             |
|                         | Sr. Designer, Workplace Strategist, Designer/Dra<br>Design Prof., Proj. Mang., Design Assoc., Specific<br>Designer, Asst. Proj. Manager | fter, Space Mang. Specia<br>cation Sales, Head of Des | list, Interior<br>sign, Lighting |
| *Gender Identity        | Female  | 54  | 93.1                             |
|                         | Male  | 4   | 6.9                              |
| *Minority or            | Yes   | 10  | 16.9                             |
| Underrepresented        | No  | 49  | 83.1                             |
| Group Status            |   |   |                                  |
| *Not all survey respond | dents completed this question   |   |                                  |

Figure 1.

Comparison of assimilation scores between underrepresented and represented designers.



Responses of those from underrepresented groups are on the top line.

\* Statistically significant at .05

#### Table 2.

Correlations between Mentor Roles and Assimilation Scores.

|                     | r    | p     |
|---------------------|------|-------|
| *Friendship (Psy)   | .486 | <.001 |
| *Coaching (CD)      | .447 | .001  |
| *Counseling (Psy)   | .439 | .001  |
| *Sponsorship (CD)   | .430 | .002  |
| *Accepting (Psy)    | .430 | .002  |
| *Challenging (CD)   | .34  | .01   |
| Promoting (CD)      | .271 | .055  |
| Parenting (Psy)     | .173 | .220  |
| Social Assoc (Psy)  | .15  | .269  |
| Protecting (CD)     | .045 | .750  |
| Role Modeling (Psy) | .027 | .866  |

\* Statically significant positive correlation (CD) indicates career development roles (Psy) indicates psychosocial functions

### Effects of Regional Airport Terminal Design on Passenger Wellbeing and Satisfaction

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#### ABSTRACT

Often associated with low-cost air travel, regional airports have been a rapidly growing constituent of the aviation industry, facilitating regional economic growth as well as providing mobility to integrate remote parts of the country, especially when roads are not a feasible and safe option for travel (Button et al., 2009). The airport industry has been growing at a steady rate of 4 to 6 percent annually; however, larger airport hubs can expand their operations only so much, as most are constantly utilizing a substantial part of their capacity. On the other hand, regional airports provide an opportunity for growth as their potential capacity is often only partly utilized (Russell, 2010), nevertheless, research on regional airports is limited presenting a large gap in the literature. The pre-flight airport experience is often regarded as the least favorite aspect of air travel due to numerous restricted procedures that introduce significant anxiety and stress, coupled with unintuitive layouts, long walking distances, and limited resting spaces (Bogicevic et. al, 2016). This is intensified only by a lack of privacy, resulting in mental and physical discomfort and exhaustion (Wattanacharoensil & Schuckert, 2016). These findings from the literature indicate that a focus on wellness in airport spaces is critical to improving passenger experiences and managing stress and anxiety due to travel. Furthermore, the strict and complicated COVID-19 pandemic procedures and limitations introduced in many airports can exacerbate the negative traveler experience, further highlighting the relevancy of this argument (Tuchen et al., 2020). Accordingly, this study aims to investigate the impact of various spatial design features as they relate to improved passenger wellness and satisfaction in regional airports. Attention restoration theory, stress reduction theory, prospect and refuge theory, and perceptual fluency model are utilized in understanding the effects of pre-flight areas in airport environments as these theories outline a framework around which an understanding of wellness

focused restorative environments can be created. The data for this research will be collected through a visual environmental preference survey consisting of 24 questions regarding various spaces that can be found in regional airports such as waiting areas, work/productivity areas, common/private rest areas, and check-in areas. The sample group will involve participants of varying age groups and backgrounds who used a regional airport in the last 2 years (n=70+). Consequently, the resulting data will be analyzed and a guideline for designing regional airport terminal interiors will be developed. It is expected that the proposed design guideline would improve the overall pre-flight experience as well as passenger wellbeing and satisfaction.

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## Discovery in the Trenches: The Impact of Remote Work on Design Practice and Education

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#### ABSTRACT

Problem Interior design education is fortunate enough to have been built upon the sturdy framework afforded by accreditation standards established through CIDA, strengthened by a certification organization whose mission is "to create, test and promote guidelines for determining competency in the practice of interior design" (CIDQ, 2020, About CIDQ, para. 3), and supported by allied groups such as ASID, IIDA and others. But when world events upend the practice of design and life in general, both education and practice must respond to changes in the design process to propel the industry forward. This study illuminates results of research conducted with a global design firm to understand the impact of the virtual work environment on design practice and implications for students entering the profession. Context The covid-19 pandemic quickly exposed and amplified challenges in the workplace. The discipline, built on relationships and multi-modal communication, was required to shift to remote work, preventing daily in-person collaboration native to design practice. Beyond inter-office communication, the pandemic client communication was affected as well, leading some designers to feel unusually isolated (should have a source here). Research suggests that even perceived social isolation has been linked to adverse health consequences including depression, accelerated cognitive decline (Hawkley & Capitanio, 2015), and higher mortality in adults (Alcaraz, et al, 2019). Not only was the quick shift to remote operations inconvenient for employees in the work environment, but designers may also have suffered individually from the realities of working remotely as they navigated challenges such as work-life balance, logistics, and communication changes. With the return to in-person work for many firms, it seems that some aspects of the changed landscape may remain in place. This begs the question, what can students expect as they enter the

workplace going forward? In an effort to understand the state of design practice, this study examines the changes to design practice as a result of the pandemic, both good and bad. Method This study surveyed 55 designers at a global firm to identify how their design practice had been impacted by shifting to a virtual work environment. The online instrument consisted of three main questions with sub-questions and open-ended options for elaboration. Participants were asked to indicate what aspects of their design practice had been impacted by the pandemic and subsequent shift to the virtual work environment, as well as what skills would be necessary for design graduates to thrive in a hybrid work environment. Participants indicated that "client engagement", "collaborative creative work" and "project presentations" experienced the greatest impact from the shift to remote work. Additionally, "mentoring teammates" and "work/life balance" had been most impacted in personal interactions, suggesting that participants had been affected on team and individual levels. Further, students' "communication" and "digital modeling skills" were identified as critical for success in the hybrid work environment. Conclusions These results illuminate the attention needed in both practice and education to support the changing conditions of the workplace. Design as a discipline is a vehicle for connecting people to places and one another. Yet, the transition to remote work can compromise the potential of such connections without careful stewardship. In response to new communication vehicles in practice, emerging designers must be nimble and responsive thinkers able to maintain connections in the workplace whether virtual or in person. Collaboration between education and practice, in that way, becomes critical to move the profession forward.

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# Interior Design's Evolving Role in the Built Environment: Exploring the Future Through the Lens of Critique

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#### ABSTRACT

Throughout the pandemic, interior design has played a critical role in executing the many strategies that mitigate spread of the COVID-19 virus. From the initial reconfiguration of spaces, placement of furniture, selection and maintenance of anti-viral surfaces and materials, lighting strategies, and integration of biophilic concepts, interior design has been a priority in conversations regarding the built environment. As interior designers sought credible data and evidence to inform decisions, ASID established the Impact Review Task Force to identify and communicate key issues related to COVID-19 and the built environment, by providing tools, education, and advocacy to advance the design of safe and healthy interior environments (ASID.org). The Impact Review Task Force consisted of an interdisciplinary community of 37 subject matter experts including researchers, academics, facility managers, and interior designers with the goal of discovering and reviewing resources related to the built environment. Preliminary content research analysis in 2020 resulted in identifying key questions that emerged at the outset of the pandemic. Through a creative process and collaborative work, the task force members prioritized areas of focus that resulted in the establishment of four main teams, concentrating on the areas of Health & Well-being, Building Design, Systems & Technology, Interior Design Context, and Facilities & Change Management. Establishing a consistent and reliable process for the work was important, as backgrounds and experience were diverse. It was determined that a 'design critique' format would be an effective process due to the complexity and open-endedness of the problem, time constraints, need for collaboration, and time for deliberation was a concept familiar and understood by all (Kuhn, 2001). For that purpose, an

assessment tool entitled CRIT was designed for task force use. The CRIT process involved analyses based on the variables of "Critical, Relevant, Innovative, and Trusted" as a framework for the groups. Subsequent analyses included individual, group, and technical advisor input to determine credible and reliable information. The CRIT was effective in that it included both formal and informal analysis in addition to group consensus (Kuhn, 2001). The critique process of over 200 articles resulted in 64 that were determined by the Task Force to provide important data for further study and elaboration. Several themes emerged from this work that contributes to a future view of interior design and its connectedness to the built environment. Connecting a theoretical framework around each pillar added context. Pillars of "Design Consciousness" emerged that contributed to insights for the future. Linked to scalability, the pillars are relevant from individuals to large scale community environments (www.asid.org., 2021). Initially, the importance of configuration patterns (spatial syntax) in the context of interior space is paramount (Mang, et al., 2012). In addition, the relationship of technology and innovation with regards to building systems and interior design cannot be decoupled as both are intrinsically related. The role of interior designers relative to the health and well being of occupants was confirmed as an integral part of viral mitigation and future planning (Mang & Reed, 2012). The management of facilities is connected to interior design solutions as guiding change in human behavior is imperative and requires thoughtful and careful planning. Integrative design as an emerging paradigm for practice evolved demonstrating the need for collaboration (Mang & Reed, 2012). Design for a resilient world is an interdisciplinary and evidence based process that crosses disciplines. These findings frame a future view for the profession that identifies the critical role of interior designers in the interdisciplinary and collaborative design process (Klein, 1996; Reed, 2007; D'Alessandro, et al., 2020).

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## Immerseive Technology in Lighting Research Experiement in Café and Office Design

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#### ABSTRACT

The built environment can have a profound effect on people's daily activity, and many designers believe that an evidence-based design approach can contribute to predicting design's effects on building and human performances. While the existing literature has established many aspects of indoor environmental quality (IEQ) well, lighting is one of the prime stimuli that design researchers investigate frequently. For example, bright light has been found to elicit positive shopping behaviors, such as spending more time at display locations and engaging in more tactile interactions with the merchandise (Summers & Herbert, 2001). Ambient lighting conditions (prestige image vs. discount image) contribute to the establishment of brand and merchandise quality that invite consumers (Sharma & Stafford, 2000). In an office environment, the levels of lighting control and visual comfort can produce environmental satisfaction, work productivity, motivation, and perceived well-being (Veitch et al., 2008). However, it is challenging for architects and designers to translate such findings into explicit design recommendations because they do not provide the compositional criteria necessary to achieve a desired level of stimulation. Many scholars have expressed the need for a theoretical framework that offers a holistic view of stimulus-response relations. One member of the team suggested a cross-disciplinary theoretical framework that outlines a range of behavioral responses related to feelings of comfort and arousal induced by lighting and sound conditions and offered empirical evidence to support the framework based upon an experiment that projects 2D still images of environmental treatments on a screen. However, reliance on projected 2D images may limit the ability to generalize these findings to a real-world situation. Another member of the team and

several other researchers found that Virtual Reality (VR) offers a promising alternative to real and projected 2D scenes in the study of perceptual attributes (Heydarian et al., 2015; Chamilothori et al., 2018) and the team has developed a robust experimental methodology for an office and retail environment that is navigable using immersive technology and allows us to simulate actual architectural scenes. The goal of this paper is to share the lessons learned and disseminate design considerations when developing a VR-based experiment. An online survey by Qualtrics was developed to measure users' behavioral responses to different environmental treatments that were simulated in an immersive environment. The survey measures five different components: comfort; arousal; pleasure; behavioral intent, and compositional qualities each treatment elicited for statistical analysis. Three different lighting conditions (low, medium, and high complexity and intensity) were developed for repeated-measures, and four different groups (two-color temperatures x two different design compositions) were created for betweenmeasures. Each treatment was modeled in Revit and rendered for a 3600 VR image by Enscape. IES files were used to simulate lighting and illuminance outputs were calculated and reported with ElumTools. The team identified several challenges and adjusted the rendering outputs based upon them. First, a web-based online survey was developed to minimize personal contact during the COVID-19 pandemic. Second, a mobile survey is available, but unsuitable to implement the immersive environment. Qualtrics offers a tool to identify OS platforms. Third, ElumTools' numeric lighting outputs do not guarantee that the real-world simulation is rendered correctly, and hence, it is necessary to adjust the exposure and report the illumination data. Finally, calibration of user monitors is critical, but impossible to control. Repeated-measures would help, but between-measures do not guarantee consistent data. This is a limitation, and we advise each participant to maximize the monitor's brightness to mitigate this.

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Appendix.

Figure 1. Café Environment Treatments: (Low, Medium, High) X (Ortho vs. Non-ortho) X (2700K vs. 5000K)



Figure 2. Office Environment Treatments: (Low, Medium, High) X (Ortho vs. Non-ortho) X (2700K vs. 5000K)





# Updating the Operating Room: Reducing Surgical Errors Due to Distractions and Interruptions Through Redesign

Hamed Yekita, Texas Tech University

#### ABSTRACT

Surgical errors and adverse events occur for about 3% of surgery patients, in which distraction among surgical team members is the most important reason for about half of hospital errors (Mentis et al., 2016). In addition, considerable surgical problems occur for almost 7 million surgical patients in which about 1 million of those patients die during or immediately after surgery (World Health Organization, 2009). A review of the literature revealed several sources of distraction and interruption in ORs, which impact the number of surgical errors in an OR. Some of these issues are directly related to the physical design, and some of them have a psychological impact that can indirectly cause distraction and interruption. Based on the literature, the sources of many of the distractions and interruptions in these ORs is the result of the ORs in the surgical suites of hospitals having significant differences in layout, both in terms of the general design (e.g., the locations of doors and the size of the room) and the positioning of equipment (Bayramzadeh et al., 2018). While the literature has done a thorough job of addressing these distractions in new designs, there are relatively few examples of how to conduct redesigns of existing ORs. The purpose of this research project is to use the literature to develop a redesign that addresses the same issues that the new designs do. To provide an example of what these redesigns might look like, this project looked at ORs in the University Medical Center (UMC) in Lubbock, TX, and developed a redesign proposal that could minimize distractions and interruptions and, consequently, the number of surgical errors. This center has 15 ORs in the surgical suite, almost all of which are different in terms of interior design and layout. These differences posed several challenges that needed to be overcome, as the literature demonstrates that uniformity is beneficial in newly designed ORs. Based on the number of ORs in the UMC

and the reality that surgical teams work in different ORs at different times, finding a way to ensure that the redesign resulted in similar ORs throughout the suite was a necessity. Doing so could help prevent any kind of distraction among surgical team members when locating different instruments or moving around the room. The UMC designs incorporated specific considerations aimed at helping surgeons and those assisting to efficiently locate the doors and main equipment and minimize distraction and interruption. This research can be helpful for many other existing ORs, which might have similar problems to find the best solutions based on their situation. Beyond providing a blueprint for redesigning the UMC, this research can serve as a foundation for other redesign projects in other hospitals. This research also provides a comprehensive review of the literature that identifies those aspects of physical design that have the greatest impact.

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# UPDATING THE OPERATING ROOM: REDUCING SURGICAL ERRORS DUE TO DISTRACTIONS AND INTERRUPTIONS THROUGH REDESIGN

# ABSTRACT

Surgical errors and adverse events occur for about 3% of surgery patients, in which distraction among surgical team members is the most important reason for about half of hospital errors (Mentis et al., 2016). In addition, considerable surgical problems occur for almost 7 million surgical patients in which about 1 million of those patients die during or immediately after surgery (World Health Organization, 2009). A review of the literature revealed several sources of distraction and interruption in ORs, which impact the number of surgical errors in an OR. Some of these issues are directly related to the physical design, and some of them have a psychological impact that can indirectly cause distraction and interruption. Based on the literature, the sources of many of the distractions and interruptions in these ORs is the result of the ORs in the surgical suites of hospitals having significant differences in layout, both in terms of the general design (e.g., the locations of doors and the size of the room) and the positioning of equipment (Bayramzadeh et al., 2018). While the literature has done a thorough job of addressing these distractions in new designs, there are relatively few examples of how to conduct redesigns of existing ORs. The purpose of this research project is to use the literature to develop a redesign that addresses the same issues that the new designs do.

To provide an example of what these redesigns might look like, this project looked at ORs in the University Medical Center (UMC) in Lubbock, TX, and developed a redesign proposal that could minimize distractions and interruptions and, consequently, the number of surgical errors. This center has 15 ORs in the surgical suite, almost all of which are different in terms of interior design and layout. These differences posed several challenges that needed to be overcome, as the literature demonstrates that uniformity is beneficial in newly designed ORs. Based on the number of ORs in the UMC and the reality that surgical teams work in different ORs at different times, finding a way to ensure that the redesign resulted in similar ORs throughout the suite was a necessity. Doing so could help prevent any kind of distraction among surgical team members when locating different instruments or moving around the room. The UMC designs incorporated specific considerations aimed at helping surgeons and those assisting to efficiently locate the doors and main equipment and minimize distraction and interruption. This research can be helpful for many other existing ORs, which might have similar problems to find the best solutions based on their situation. Beyond providing a blueprint for redesigning the UMC, this research can serve as a foundation for other redesign projects in other hospitals. This research also provides a comprehensive review of the literature that identifies those aspects of physical design that have the greatest impact.

| AUTHORS                   | POTENTIAL RISK SOURCES FOR PATIENT SAFETY DUE TO   |
|---------------------------|--|
|                           | INTERRUPTIONS  |
| Ahmad et al. (2016)       | OR setting, workflow traffic   |
| Bayramzadeh et al. (2018) | OR layout, workflow patterns   |
| Healey et al. (2007)      | Equipment, procedure, noise, flow disruptions  |
| Healey et al. (2006)      | failing or missing equipment, difficulties with the work environ calls, external staff entering  |
| Joseph et al. (2018)      | OR design, Ventilation and air quality, temperature and humidi   |
| Joseph et al. (2019)      | Flow disruptions   |
| Jung et al. (2019)        | Door opening, teaching, device malfunction, irrelevant convers   |
| Kurmann et al. (2012)     | Noise, stress, fatigue, case-irrelevant communication, surgical movement   |
| Lee et al. (2013)         | Internal distraction such as sleepy, illness, injury, and social stre<br>distraction such as answering pages, consulting, and common<br>unfamiliar scrub nurses/techs with the procedure and/or instru |
| Lynch et al. (2009)       | Door opening   |
| Mentis et al. (2016)      | Movement, case irrelevant conversation, equipment, procedure   |
| Mousavi et al. (2018)     | Door opening   |
| Palmer et al. (2013)      | Communication, usability, layout, environmental hazards, equi  |
| Parikh et al. (2010)      | Shift change, breaks   |
| Parker et al. (2010)      | Flow disruptions, irrelevant conversations, equipment malfunction ringing, noise, consultant, shift turnover   |
| Persoon et al. (2011)     | Pager, telephone, radio, door movement, equipment, procedu   |
| Weigl et al. (2015)       | People enter/exit OR, telephone/beeper, communication, equi procedure, teaching  |
| Wiegmann et al. (2007)    | Flow disruptions consisted of communication failure, equipme training, resource accessibility  |
| Wiegmann et al. (2006)    | Flow disruptions   |
| Zheng et al. (2008)       | Instrument change, surgeon position change, nurse duty shift, phone/pager, disruptions   |



pment failure,

tion, pagers/phone

re, communication pment/environment,

ent, interruptions,

, conversation,





# UPDATING THE OPERATING ROOM: REDUCING SURGICAL ERRORS **DUE TO DISTRACTIONS AND INTERRUPTIONS THROUGH REDESIGN**





Sterile Supply Access 

| OR | Scrub/<br>Sub-Sterile | OR | OR | Scrub/<br>Sub-Sterile      | OR |
|----|-----------------------|----|----|----------------------------|----|
|    |                       |    |    |                            |    |
| OR | Scrub/<br>Sub-Sterile | OR | OR | Scrub/<br>Sub-Sterile      | OR |
|    | Sterile Supply Access |    |    | /<br>Sterile Supply Access |    |

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Traditional design (Retrieved from Kobus, R. L., Skaggs, R. L., Bobrow, M., Thomas, J., Payette, T. M., & Kliment, S. A. (2008). Building type basics for healthcare facilities (Vol. 13). John Wiley & Sons).



Sterile core design (Retrieved from Kobus, R. L., Skaggs, R. L., Bobrow, M., Thomas, J., Payette, T. M., & Kliment, S. A. (2008). Building type basics for healthcare facilities (Vol. 13). John Wiley & Sons).





# CONCLUSION

- Same-handed design for ORs to minimize delays and distractions
- Angled surgical table to minimize interruption and improve efficiency
- Enhanced layout to minimize interruption • Clear traffic route within the ORs to reduce
- interruption • Identical location for scrub of each OR to reduce distraction
- Enhanced central sterile core to reduce interruption
- Improved floors for noise reduction
- Better wall color to minimize light reflection to reduce distraction

Access to sterile core from all ORs

Angled table to minimize disruptions and maximize efficiency

Same-handed OR design to minimizedistractions and interruptions

> Sufficient and clear circulatingarea to minimize disruptions

> > Circulating nurse workstation-

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# Flexibility vs. Community: Two Studies about Coworking Space and the Members Social Connectivity

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#### ABSTRACT

Although coworking spaces are commonly associated with the concept of community (Spinuzzi et al., 2019), few studies have explored whether and how coworking empowers social network formations among the members (Gandini, 2015). Does the coworking environment truly play a role in affecting the members' social interactions? The primary goal of this research project is to explore how coworking members are socially connected and what environmental factors are related to their social networks formation. It aims at offering a critical understanding of the coworking environment's design, the member's social connectivity, and the relationships between the two. Two studies are included in this project. Study #1 is an exploratory study that empirically investigates coworking space characteristics and the members' social connectivity. Mixed methods were applied to study coworking spaces in New York City (Figure 1). A total of 12 coworking managers were interviewed, and this qualitative data was complemented by 160 hours of participant observation and surveys finished by 42 coworking members from 7 coworking spaces. The results suggest that social connectivity between the members was low even before the Covid-19 pandemic. Three major reasons were identified: lack of opportunity, lack of motivation, and a behavioral norm of minimizing interaction in the open-plan environment. Both the type of membership plan and space access time were found to be significantly associated with the members' social connectivity. These findings led me to explore the nature of "flexibility", which is another characteristic-defining feature of coworking space. I propose that flexibility is about the spatial-temporal relationship between the space and the occupants, which can be described as how much visibility and mobility the space offers, and how much time the occupants are physically present in the space. A follow-up question was raised:

are there potential conflicts between flexibility and the members' social network formation? A 2x2 online survey experiment (Study #2) was conducted to examine whether increased spatialtemporal flexibility negatively affects an individual's attitudes toward social interaction in work settings. Based on data collected from a sample of 315 participants recruited using Amazon's Mechanical Turk, results suggested supportive evidence for my hypotheses (Table 1). The results suggest that increased flexibility in coworking space and access time-frequency might cast a counterproductive effect on the members' social network formation, through influencing the individual's situational norms in the work settings, decreasing perceived benefits for interaction, and diminish the opportunities for social encounters. Overall, this research's findings suggest that increased flexibility in space and time negatively affects an individual's attitude toward social interaction in work settings. These results suggest that the nature of coworking may embody a conflicting relationship between the two concepts: "flexibility" and "community." The two studies in this project deepen the understanding of coworking as a contemporary office typology and design concept. It contributes to the knowledge of workplace design and programming practices in both the fields of architecture and interior design. This project also exemplifies an approach to take social connectivity, or network size as an outcome variable to study how the environment might affect an individual's social connections in work settings.

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#### Appendix



Figure 1: A Map of Coworking Cases in NYC Area (Data Collected at January 2020)

Coworking spaces visited

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Coworking spaces in NYC

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| Hypotheses   | Test                      | Results                                     | Supported |
|--|---------------------------|---|-----------|
| H1: Participants in hot-desking<br>environments are more likely to agree that<br><b>no interaction is a norm</b> than participants<br>in a private office environment.   | Wilcoxon<br>Signed-Ranks  | Z = 2.11,<br>p = .034                       | Yes       |
| H2-a: Participants who use the space for a longer period will be more likely to report that they <b>have made new friends</b> than members who have stayed in the space for a shorter period.                  | Pearson's<br>Chi-square   | $\chi^2(1, N = 161)$<br>= 5.27,<br>p = .022 | Yes       |
| H2-b: Participants who use the space more<br>frequently will be more likely to report that<br>they <b>have made new friends</b> than members<br>working in coworking spaces less<br>frequently.                | Pearson's<br>Chi-square   | $\chi^2(1, N = 161)$<br>= 7.09,<br>p = .008 | Yes       |
| H3: Participants who use the coworking<br>space occasionally will report lower levels<br>of <b>perceived benefits</b> for interacting with<br>members than members who use the space<br>regularly on workdays. | Wilcoxon<br>Signed-Ranks  | Z = 0.38,<br>p = .701                       | No        |
| H4: Participants' self-reported situational norms are positively associated with the willingness to interact.  | Spearman's<br>Correlation | rs(315) =43,<br>p < .001                    | Yes       |
| H5: Participants' self-reported perceived social benefits are positively associated with the willingness to interact.  | Spearman's<br>Correlation | rs(315) = .64,<br>p < .001                  | Yes       |

Table 1: Summary of Hypotheses Testing Results for Study#2

#### Scholarship of Design Research | Social & Environmental | Presentation

## Workplace Safety, Productivity, Corporate Culture, and Collaboration as Affected by COVID-19

Suyeon Bae, Kyung Hee University Caren Martin, Martin and Guerin Design Research, LLC

#### ABSTRACT

Introduction A Fortune 1000 corporation's strategy Workplace of the Future addressed the renovation of their global corporate headquarters. Their vision applied guiding principles about indoor environmental quality (IEQ), well-being, productivity, attraction/retention of talent, and corporate culture for 1,200 employees. A post-occupancy evaluation (POE) completed just before a work from home (WFH) policy was instituted (March 2020). Findings indicated significant improvements in occupants' satisfaction, work performance, and health resulted from design modifications informed by the 2019 pre-design occupancy evaluation (PDOE) (Haapakangas et al., 2018); both studies of the Engine Air (EA) Group. Findings will influence design of the remaining 85% of the 177,000 square feet of workspace. With COVID-19, work dramatically changed (Kaushik & Guleria, 2020) and the safeguards needed to protect workers (Sari & Budiyanti, 2020). For months, only the company's "essential workers" were on campus. The first challenge was to adapt policies and practices to keep those employees safe, including mandatory distancing, closed conference rooms, temperature checks, and stepped-up ventilation, as advocated by the CDC. As work flowed across campus between laboratories and offices, collaboration and communication challenges of the hybrid work model were significant and impacted by IEQ importance, workstyles, and corporate culture. Knowledge gleaned from survey findings regarding IEQ was explored through interviews with the client to discover the context of occupant and corporate culture impacts, and their effect on collaboration and dissemination of institutional knowledge. Their future relies on talented employees. COVID-19 presents a unique challenge as the nature and place of work changes. Method Researchers conducted PDOE

(March 2018; n = 56) and POE (February 2020; n = 64) online surveys; the POE one year after EA moved into their renovated space. In September 2020 and 2021 the client was interviewed about the PDOE/POE process and findings, status of the Workplace of the Future process, IEQ perceptions, current campus-wide conditions (corporate culture, workplace safety, collaboration), and how COVID-19 influenced workplace use. Conclusion and Implications If changes the company experiences are transitory or permanent are concerns for their future work. They note, "It's all about information transfer and we don't know how this 'experiment' is altering us and our work." Current occupancy trends indicate 40-70% of employees are working in a hybrid model, 10-20% always WFH, and 10-20% always on campus. The biggest design change was workstation types. The 2019 shift from high (78%) to low panel heights (79%) (Table 1) to enhance collaboration was deemed unsafe in 2020, forcing 'checkerboard' cubicle occupancy. Today, that policy has relaxed due to high vaccination rates and lower office occupancy. Employees' predominant workstyle is heads-down (Focus) (Table 2). Of all IEQ factors (Table 3), employees rated acoustic conditions and privacy most important IEQ factors (Table 4) and that they hindered work performance (Table 5); perceptions that reduced occupancy may improve. Cubicle ergonomics improved, especially from an adjustable height, deeper primary worksurface (multiple monitors) (Table 6). Physical support for employees who WFH is an area for policy development. Corporate culture is shifting; in-person collaboration was the norm. The renovation afforded employees greater variety of workspace types; cubicle, private office, enclosed huddle or conference room, or Innovation Room (teaming space). It is unclear how a hybrid occupancy paradigm will impact key 2020 workplace goals: innovate, communicate, and focus (Table 7). They hope WFH gives employees one more option about how to be successful; recruitment and retention increasingly relies on supporting employee choice. Interior design research and practice are at the core of these challenges.

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# Workplace safety, productivity, corporate culture, and collaboration as affected by COVID-19 Appendix

Table 1. PDOE and POE Workstation Types

| Workstation Types                             | PDO       | PDOE    |           | E       |
|---|-----------|---------|-----------|---------|
|   | Frequency | Percent | Frequency | Percent |
| Enclosed private office                       | 10        | 15.6    | 9         | 16.1    |
| Workstation with low partitions               | 1         | 1.6     | 44        | 78.6    |
| Workstation with high partitions              | 50        | 78.1    | 0         | 0       |
| Workstation with both low and high partitions | 2         | 3.1     | 3         | 5.4     |
| Work area in a lab                            | 0         | 0       | 0         | 0       |
| Other   | 1         | 1.6     | 0         | 0       |
| Total   | 64        | 100     | 56        | 100     |

#### Table 2. Employees' Workstyles and Time Spent in Each - PDOE and POE Comparison

| _                     | Workstyle (Percentage)* |     |       |     |             |     |              |     |  |
|-----------------------|-------------------------|-----|-------|-----|-------------|-----|--------------|-----|--|
| Percentage<br>of Time | Focus                   |     | Learn |     | Collaborate |     | Relationship |     |  |
| or finite             | PDOE                    | POE | PDOE  | POE | PDOE        | POE | PDOE         | POE |  |
| 1-19%                 | 2                       | 5   | 56    | 59  | 17          | 25  | 53           | 63  |  |
| 20-39%                | 25                      | 16  | 28    | 32  | 47          | 50  | 33           | 23  |  |
| 40-59%                | 25                      | 36  | 9     | 5   | 25          | 16  | 8            | 2   |  |
| 60-79%                | 31                      | 30  | 3     | 4   | 8           | 9   | 3            | 9   |  |
| 80-100%               | 17                      | 13  | 3     | 0   | 3           | 0   | 3            | 4   |  |

\* Due to rounding, percentages may not add up to 100%.

| #  | IEQ Criteria (1-26)<br>(Category level criteria<br>are bold face) | PDOE | POE  | SD   | N  | Stat.<br>Sign. | Interpretation<br>(D = Dissatisfied)<br>(S = Satisfied) |
|----|---|------|------|------|----|----------------|---|
| 1  | Overall indoor air<br>quality                                     | 3.89 | 5.57 | 1.25 | 56 | YES            | Satisfied   |
| 2  | Access to electric outlets  | 3.68 | 5.54 | 1.22 | 56 | YES            | Satisfied   |
| 3  | Amount of electric light  | 4.20 | 5.50 | 1.07 | 56 | YES            | Satisfied   |
| 4  | Overall electric lighting<br>conditions                           | 3.66 | 5.46 | 1.07 | 56 | YES            | Satisfied   |
| 5  | Overall vibration and<br>movement                                 | 5.05 | 5.43 | 1.28 | 56 | NO             | Satisfied   |
| 6  | Overall technology  | 4.89 | 5.41 | 1.24 | 56 | YES            | Satisfied   |
| 7  | Appearance (aesthetics)<br>of furnishings                         | 3.06 | 5.38 | 1.14 | 56 | YES            | Satisfied   |
| 8  | Air velocity (drafty or<br>stagnant)                              | 4.36 | 5.34 | 1.42 | 56 | YES            | Satisfied   |
| 9  | Overall appearance<br>(aesthetics) of the<br>space                | 2.67 | 5.32 | 1.27 | 56 | YES            | Satisfied   |
| 10 | Overall daylighting<br>conditions                                 | 3.28 | 5.27 | 1.45 | 56 | YES            | Satisfied   |
| 11 | Function of furnishings   | 4.25 | 5.26 | 1.35 | 54 | YES            | Satisfied   |
| 12 | Humidity (dry or moist)   | 4.63 | 5.24 | 1.12 | 54 | YES            | Satisfied   |
| 13 | Overall furnishings   | 3.76 | 5.22 | 1.36 | 55 | YES            | Satisfied   |
| 14 | Overall cleaning and<br>maintenance                               | 4.36 | 5.21 | 1.33 | 56 | YES            | Satisfied   |
| 15 | Amount of daylighting   | 3.19 | 5.16 | 1.47 | 56 | YES            | Satisfied   |
| 16 | Fresh air flow  | 3.33 | 5.13 | 1.10 | 56 | YES            | Satisfied   |
| 17 | Overall thermal<br>conditions                                     | 3.91 | 4.61 | 1.64 | 56 | YES            | Satisfied   |
| 18 | Personalization of space  | 4.27 | 4.46 | 1.63 | 56 | NO             | Neither S or D  |
| 19 | Ability to hear desired<br>sounds                                 | 4.41 | 4.41 | 1.52 | 56 | NO             | Neither S or D  |
| 20 | Temperature (hot or cold)   | 3.86 | 4.36 | 1.74 | 56 | NO             | Neither S or D  |
| 21 | Adjustability of<br>daylighting                                   | 2.81 | 4.04 | 1.72 | 56 | YES            | Neither S or D  |
| 22 | Adjustability of thermal<br>conditions                            | 2.91 | 3.64 | 1.54 | 56 | YES            | Neither S or D  |
| 23 | Overall view conditions   | 3.30 | 3.50 | 1.75 | 56 | NO             | Dissatisfied  |
| 24 | Overall acoustic quality  | 3.52 | 3.36 | 1.61 | 55 | NO             | Dissatisfied  |
| 25 | Overall privacy (sound<br>and visual privacy)                     | 4.02 | 3.25 | 1.60 | 56 | YES            | Dissatisfied  |
| 26 | Ability to limit undesired<br>sounds                              | 3.16 | 3.07 | 1.64 | 56 | NO             | Dissatisfied  |

Table 3. Primary workspace - satisfaction with IEQ criteria

\* Interpretation (Inter) was rated as satisfied (S), neither dissatisfied nor satisfied (ND/NS), or dissatisfied (DS). Means with significant changes have been bolded. Likert scale (1-7) was used. Highlighted/bolded text identifies IEQ factors that were considered "Important" (see Table 4).

|                          | PDOE         |            |      |                |       | POE        |                |                |
|--------------------------|--------------|------------|------|----------------|-------|------------|----------------|----------------|
| IEQ Criteria             | Satisfaction | Importance |      | Satisfaction   | lı    | Importance |                |                |
|                          |              | Freq.      | %ª   | % <sup>b</sup> |       | Freq.      | % <sup>a</sup> | % <sup>b</sup> |
| Acoustic conditions      | 3.52         | 42         | 68.9 | 14.89          | 3.36  | 39         | 70.91          | 16.25          |
| Appearance (aesthetics   | 2.67         | 11         | 10.2 | 2 00           | 5 2 2 | 12         | 24 52          | E 42           |
| of space)                | 2.07         | 11         | 19.5 | 5.90           | 5.52  | 15         | 24.55          | 5.42           |
| Cleaning and             | 1 36         | 7          | 12 7 | 2/18           | 5 21  | 10         | 18 52          | / 17           |
| maintenance              | 4.50         | ,          | 12.7 | 2.40           | 5.21  | 10         | 10.52          | 4.17           |
| Daylighting conditions   | 3.28         | 26         | 44.8 | 9.22           | 5.27  | 23         | 42.59          | 9.58           |
| Electric lighting        | 3 66         | 15         | 27.2 | 5 2 2          | 5.46  | 6          | 11 76          | 2 50           |
| conditions               | 5.00         | 15         | 27.5 | 5.52           | 5.40  | 0          | 11.70          | 2.50           |
| Furnishings              | 3.76         | 31         | 51.7 | 10.99          | 5.22  | 23         | 44.23          | 9.58           |
| Indoor air quality (IAQ) | 3.89         | 33         | 57.9 | 11.70          | 5.57  | 21         | 41.18          | 8.75           |
| Personal control         | -            | 18         | 30.5 | 6.38           | -     | 16         | 31.37          | 6.67           |
| Personalization          | 4.27         | 10         | 17.2 | 3.55           | 4.46  | 6          | 11.32          | 2.50           |
| Privacy (acoustic and    | 4.02         | 20         | 62.2 | 12.40          | 2.52  | 20         | FC 9C          | 12.00          |
| visual)                  | 4.02         | 58         | 03.3 | 13.48          | 3.52  | 29         | 50.80          | 12.08          |
| Technology               | 4.89         | 22         | 40.0 | 7.80           | 5.41  | 19         | 38.00          | 7.92           |
| Thermal conditions       | 3.91         | 17         | 29.8 | 6.03           | 4.61  | 24         | 46.15          | 10.00          |
| View conditions          | 3.30         | 12         | 21.4 | 4.26           | 3.50  | 11         | 21.57          | 4.58           |
| Total                    |              | 282        |      | 100            |       | 240        |                | 100            |

Table 4. IEQ Criteria Satisfaction Scores and Most Importance (PDOE and POE)

Note: %<sup>a</sup>: percentage within IEQ, %<sup>b</sup>: percentage within the importance. Likert scale (1-7) was used. Employees did not rate their satisfaction about "Personal Control" as a singular IEQ factor.
|    |  |      | PD   | OE |        |      | PC   | Statistically |        |                       |
|----|--|------|------|----|--------|------|------|---------------|--------|-----------------------|
|    | Attributes**   | Mean | SD   | N  | Inter* | Mean | SD   | Ν             | Inter* | Significant<br>Change |
|    | Ability to have one-on-one<br>conversations without being<br>overheard           | 3.49 | 2.10 | 63 | HI     | 2.61 | 1.60 | 56            | HI     | No                    |
|    | Absence of background noise<br>or talking (i.e., nearly silent)                  | 4.35 | 1.82 | 63 | NH/NE  | 4.51 | 1.80 | 51            | EN     | No                    |
| AP | Background noise generated by mechanical systems                                 | 3.57 | 1.50 | 61 | NH/NE  | 4.40 | 1.46 | 52            | NH/NE  | No                    |
|    | Background noise generated by music, equipment, tools, etc.                      | 3.61 | 1.53 | 59 | NH/NE  | 4.02 | 1.59 | 47            | NH/NE  | No                    |
|    | Background noise generated by people talking around you                          | 2.68 | 1.58 | 63 | HI     | 2.78 | 1.56 | 55            | HI     | No                    |
|    | Use of sound masking or 'white noise'  |      | 1.70 | 51 | NH/NE  | 4.45 | 1.73 | 55            | NH/NE  | No                    |
|    | Ability to limit visual distractions   | 5.27 | 1.52 | 63 | EN     | 3.80 | 1.74 | 56            | HI     | Yes                   |
| VP | Ability to see desired elements<br>(coworkers, technology, view<br>out a window) | 4.37 | 1.48 | 63 | NH/NE  | 4.36 | 1.27 | 56            | NH/NE  | No                    |
|    | Amount or extent of visual privacy   | 5.16 | 1.38 | 63 | EN     | 3.73 | 1.50 | 56            | н      | Yes                   |

Table 5. Acoustic Privacy (AP) and Visual Privacy (VP) and Work Performance (PDOE and POE)

\* Interpretation (Inter) was rated as enhanced (EN), neither hindered nor enhanced (NH/NE), or hindered (HI). Means with significant changes have been bolded. Likert scale (1-7) was used.

\*\* As "N/A" was an option for answering these questions, it is likely that the reduction in the number of responses about these attributes reflect employees' "N/A" responses, which reduced the number of responses (N) and were not used to calculate the mean satisfaction scores.

| Table 6. Primary | Workstation | Ergonomics - | Overall | Satisfaction | (PDOE | and POE) |
|------------------|-------------|--------------|---------|--------------|-------|----------|
|------------------|-------------|--------------|---------|--------------|-------|----------|

| Attributes**   |      | PD   | OE |        |      | PC       | Statistically<br>Significant |        |        |
|--|------|------|----|--------|------|----------|------------------------------|--------|--------|
|  | Mean | SD   | N  | Inter* | Mean | /lean SD |                              | Inter* | Change |
| Ability to work in a<br>comfortable, supported<br>posture when sitting | 4.69 | 1.65 | 64 | S      | 5.88 | 1.08     | 56                           | S      | Yes    |
| Absence of visible glare on monitor(s) or documents                    | 5.16 | 1.61 | 63 | S      | 5.76 | 1.55     | 55                           | S      | Yes    |
| Adjustable height worksurface  | 2.98 | 2.15 | 58 | DS     | 6.68 | 0.64     | 44                           | S      | Yes    |
| Chair comfort, ease of<br>adjustment, and back<br>support              | 4.47 | 1.83 | 64 | ND/NS  | 5.89 | 1.04     | 56                           | S      | Yes    |
| Computer (laptop/desktop),<br>keyboard, and mouse<br>placement         | 4.56 | 1.77 | 64 | S      | 5.91 | 1.07     | 54                           | S      | Yes    |

| Attributes**  |      | PD                           | OE |   |      | PC   | Statistically<br>Significant |   |        |
|---|------|------------------------------|----|---|------|------|------------------------------|---|--------|
|   | Mean | SD N Inter* Mean SD N Inter* |    |   |      |      |                              |   | Change |
| Leg clearance under the worksurface   | 4.94 | 1.86                         | 63 | S | 6.14 | 1.38 | 49                           | S | Yes    |
| Monitor(s) viewed without neck bent or twisted  | 4.81 | 1.74                         | 64 | S | 5.95 | 1.19 | 55                           | S | Yes    |
| Place for work items (tools,<br>writing instruments, etc.)<br>within accessible reach | 5.22 | 1.35                         | 63 | S | 5.73 | 1.38 | 56                           | S | Yes    |

Table 6. Primary Workstation Ergonomics - Overall Satisfaction (PDOE and POE) (CONTINUED)

\* Interpretation (Inter) was rated as satisfied (S), neither dissatisfied nor satisfied (ND/NS), or dissatisfied (DS). Means with significant changes have been bolded. Likert scale (1-7) was used.

\*\* As "N/A" was an option for answering these questions, it is likely that the reduction in the number of responses about these attributes reflect employees' "N/A" responses, which reduced the number of responses (N) and were not used to calculate the mean satisfaction scores.

| Goals*             |       | PDOE |                | POE   |       |                |  |  |  |  |  |
|--------------------|-------|------|----------------|-------|-------|----------------|--|--|--|--|--|
|                    | Freq. | %ª   | % <sup>b</sup> | Freq. | %ª    | % <sup>b</sup> |  |  |  |  |  |
| Be fun             | 6     | 11.1 | 3.61           | 7     | 13.21 | 4.55           |  |  |  |  |  |
| Be serious         | 2     | 3.6  | 1.20           | 0     | 0.00  | 0.00           |  |  |  |  |  |
| Be adaptable       | 13    | 23.2 | 7.83           | 8     | 15.09 | 5.19           |  |  |  |  |  |
| Know each other    | 1     | 1.8  | 0.60           | 1     | 2.00  | 0.65           |  |  |  |  |  |
| Communicate        | 16    | 28.6 | 9.64           | 25    | 47.17 | 16.23          |  |  |  |  |  |
| Spontaneous        | 1     | 1.9  | 0.60           | 1     | 2.04  | 0.65           |  |  |  |  |  |
| Innovative         | 25    | 44.6 | 15.06          | 26    | 50.98 | 16.88          |  |  |  |  |  |
| Responsive         | 16    | 28.1 | 9.64           | 12    | 23.53 | 7.79           |  |  |  |  |  |
| Efficiency         | 23    | 41.8 | 13.86          | 14    | 26.92 | 9.09           |  |  |  |  |  |
| Collaborative      | 15    | 27.3 | 9.04           | 20    | 39.22 | 12.99          |  |  |  |  |  |
| Focus              | 28    | 47.5 | 16.87          | 23    | 42.59 | 14.94          |  |  |  |  |  |
| Attract and retain | 17    | 29.3 | 10.24          | 15    | 28.85 | 9.74           |  |  |  |  |  |
| Trust              | 3     | 5.4  | 1.81           | 2     | 3.85  | 1.30           |  |  |  |  |  |
| Formal             | 0     | 0.00 | 0.00           | 0     | 0.00  | 0.00           |  |  |  |  |  |
| Total              | 166   |      | 100            | 154   |       | 100            |  |  |  |  |  |

Table 7. PDOE and POE Workplace Goals Ranked by Most Importance

\* Most important Goals identified in the two surveys are highlighted/bolded.

Scholarship of Design Research | Social & Environmental | Presentation

# Historic Housing Models for Sustainable, Affordable, Small Houses: Arthurdale, WV

Gregory Galford, Virginia Tech Lisa Tucker, Virginia Tech

### ABSTRACT

Problem Sustainable, affordable housing is a significant problem in the US today. Sustainable housing directly impacts climate change and everyone needs a place to live (aspeninstitue.org). The need for Affordable housing increases every year with an estimated shortage of 7.2 million living units (National Low Income Housing Coalition). The combination of COVID 19 and climate change induced natural disasters has exacerbated the problem around the globe. Context In the US, most single-family houses are not designed by trained design professionals (Gutman, 1988; Tucker, 2008). As a result, the market driven single house developments strategy has led to houses that are overly large with the average square footage increasing each decade. Further in order to maximize profits and a continues demand the average expected lifetime of residential building is around 20 years. This combination of factors has led to a housing stock that is not sustainable and few people can afford. There have been a few attempts historically to provide sustainable and affordable houses for people. (Tucker, 2008) Arthurdale Context The town of Arthurdale, West Virginia was established largely through the efforts of Eleanor Roosevelt as an early part of New Deal programs to help the needy. After witnessing the poverty in nearby coal camps, she used her influence to initiate a governmental led initiative in sustainable rural housing. Residents were given a homestead with a home with indoor plumbing and central heating, as well as enough land for a garden and a cow. A constructed root cellar was built behind all homes for food storage so that all residents could provide food for themselves. Artisan workshops were in the central area of the town to instruct residents with particular trades, such as metalworking. A community school and a community hall for public gatherings were also constructed. The town was owned by the U.S. Government until 1947, when homes were sold to residents. Arthurdale Heritage, Inc. was established in 1984 to promote the history of the town.

Methods This presentation covers three housing models from the early 20th century—all architect designed—for a sustenance housing community endorsed and championed by Eleanor Roosevelt for Arthurdale WV. The layout and features of the interior comprise the specific focus of this work. All designed and constructed between 1930-1940, these house designs supported substance farming. Each owner had land for livestock and growing food which was processed and stored on site. The lots often included root cellars and barns to support these processes. The three plan types vary but all are small in square footage and efficient in circulation. This work includes a plan analysis which is then supported by a survey of 380 people who either currently live in these houses or have in the past. The survey asks several questions about the house layouts and interiors to see what features have stood the test of time versus those which have had to be renovated or replaced. Findings/Implications Sustainable and affordable housing for people will only continue to be a more pressing problem. The combination of COVID 19 and natural disasters have left a record number of US people homeless and displaced. Tackling this issue is a critical arena for designers. Looking to historic house projects such as Arthurdale can provide a starting point for new endeavors. Learning from the lessons of the past can shape the future of residential design.

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# Shared Streets: Spatial Appropriations in the COVID-19 Era

Deborah Schneiderman, Pratt Institute; Liliya Dzis, Pratt Institute

### ABSTRACT

Issue: Due to the constraints placed in response to the global Coronavirus Covid-19 pandemic our interiority has become convoluted. The near elimination of typical gathering places, the restrictions on the number of those that can gather in them and the challenges to the usual means of travel, have shifted the parameters of interiority. The onset of the global pandemic resulted in the sequestering human habitation to occur almost entirely within the interior environment. As locales across the globe re-open, this inhabitation flips, causing exterior to become interior. Gatherings that might typically occur inside have moved to the outside. Those acts include, but are not limited to, a private conversation, a class gathering, a haircut, a class meeting, and dining. A notable result is an explosion of outdoor dining habitations taking to the streets and occupying the space of a parked car. In New York City, during periods of the pandemic, one could only gather to dine outside of the home within the boundary of the exterior/interior (an exterior environment with an interior condition) of restaurants. The dining habitations conform to constricted dimensions (typically the size of one parking space) and are made possible through their spatial appropriation of the once public area of the street utilized for parking. While there are considerable positive benefits to the dining environments, this appropriation of the public streetscape for private use alters the traffic patterns for those who are not dining and severely limits public inhabitation of the environments as they are accessible only to those who can afford the cost to dine. Context and Method: This presentation analyses and investigates the construction and inhabitation of the appropriated parking spaces as dining habitations as they align with the theoretical area of inquiry regarding exterior spaces with interior conditions or exterior/interiors (1). The interiority of appropriated parking spaces in public streets as dining habitations is made possible by the psychological, atmospheric, formal, and programmatic

conditions that transform exterior spaces into interior conditions (2). The dining habitations are researched from the acute perspective of one area in Brooklyn, predominantly Smith Street and Union Street in the Carroll Gardens neighborhood. Conceptualized from the stance of a lived inhabitation of city life limited by the pandemic and a privilege/choice not to utilize transportation unless critically necessary. Therefore, the visual research is from a series of walks over three seasons including Summer 2020, Autumn 2020 and Winter 2020/2021. The practice of "Derive" pedestrian view when walking the city, can be understood as critical inhabitation where pedestrians not only understand its meaning but take part in creating it (3). It is from this perspective that the authors intentionally choose to only analyze experienced dining habitations. Conclusion and Outcomes The experience of public interiority of the dining habitations, as described along NYC streets, is binary. On the one hand, they privilege those that can afford to patronize them, making more evident the socio-economic differences within the population, while on the other they keep people employed while providing much needed gathering spaces in a period of severe isolation. This new found interiority, an appropriation of once public space, can only be experienced by those who can afford the cost of a meal. The micro-environments could also be considered intrusive - and on display - to those trying to walk by. A proposal that would be more inclusive would share the streets in a more equitable way by considering temporal occupation of the environments, hence providing the possibility of appropriation and its appreciation to everyone.

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Dining Inhabitation Social Distancing Diagram



New York City Open Restaurants Criteria Site Requirement Diagram



Dining Inhabitation with Heaters Diagram



Dining Inhabitation Tethered to Building Diagram



Uninhabited Dining Inhabitation Diagram

Scholarship of Design Research | Social & Environmental | Presentation

### Slow Interiors Manifesto: A Renewed Framing of Interiors

Andrea Sosa Fontaine, Kent State University Sam Bennett, Parsons School of Design

### ABSTRACT

The Interior Design discipline has rapidly evolved and expanded since 1905, when Elsie de Wolfe was first paid to design an interior space. Both society and industry have shifted substantially. The Fourth Industrial Revolution has brought new systems of production, mobility, and artificial intelligence at an exponential pace unseen before. (Schwab, 2016) Where are we speeding to? Humankind has created a dire global climate crisis and an astounding amount of excess waste. The construction industry's annual embodied carbon is responsible for 11% of global GHG emissions from new building materials alone. "It is anticipated that embodied carbon will be responsible for 49% of global building carbon emissions for new construction between 2020 and 2050." (Architecture 2030, n.d.) It's time to slow down and reflect. As Lois Weinthal stated a decade ago, "Architectural theory identifies major themes and ideas in the history of architecture, but an equivalent framework for interiors - one that references design history and simultaneously builds upon its interdisciplinary relationships - is missing and needs to be written" (2011, p.11). By taking a moment to reflect on what interior design was, is, and could be, there is an opportunity to shape the future of the built environment. Slow Interiors, is a manifesto, based on research, reflection, and dialog that uses theoretical, ethnographic, and creative methods, offering a framework for what interior design could become in the future. Through an understanding that complex relationships exist of bodies, identity and clothing, objects and memory, we can begin to unpack place attachment and extend the longevity and sustainability of interior environments. The Slow Interiors Manifesto: We must consider the rapid pace at which people and their needs change. Interiors are uniquely positioned to be more closely connected to bodies, especially compared to the monumental scale of architecture. As interior designers, we innately respond to human behavior, and this response should go beyond

current inhabitants of space, that each and every space will eventually be occupied by someone else. Interior space should have capacity to expand, stretch, shrink and reform in response to how people need to use them. Our global inventory of buildings and interior spaces is expansive, yet we are still building new. Through active cataloging of what already exists, we subsequently amplify and extend the value in the existing. These practices of documentation begin to reveal new opportunities for recycling existing spaces that are rich with past histories. (Cathcart et al., 1989) Repair must become an extension of our design practices. As designers, we must not only look at the existing, but of the quality of craft and longevity in new construction, and its future need for repair. This requires strong ties between people and spaces. It is a way of designing spaces that are more human(e), and that in itself is enough to motivate renewed practices in the design of interiors. Through reframing of interior space as slow interiors, designers are challenged to look beyond the final walkthrough and instead acknowledge that every space will change bodies, values, and program, while accumulating memories, wear, and imprints of life. As interior designers, we can contribute to responsible interior spaces through social responsibility and sustainable longevity. By expanding the dialogue about interiors, slow interiors can have impact in both the practice and the discourse of interior design. Not simply predicting what the future of interior design will be, but instead, expanding the capacity of what interior design can contribute to a future society. Slow interiors presents interior design beyond the static image of a moment in time, but instead as a living and breathing space.

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# The impact of direct and indirect experiences of biophilic design toward positive guest responses in hotel environments

Jisun Lee, University of Arkansas

### ABSTRACT

Empirical studies have demonstrated that a physical environment plays a critical role in customers' perceived service quality, emotions, and satisfaction in the hotel industry (Ali and Amin, 2014; Han and Kyu, 2009). The purpose of this study is to examine how biophilic design affects positive guest experiences in hotel environments and explore the differences among their responses to different types of biophilic design experiences: direct and indirect. Kellert and Calabrese (2015) suggest two different types of experiences that biophilic design can offer: direct experience of nature and indirect experience of nature and categorize the attributes of each biophilic design experience. The direct experience refers to direct exposure to natural features, such as daylight, air, plants, water, and fire. The indirect experience refers to indirect contact with natural features, e.g., shapes, forms, geometries, and images of nature. A recent study presented a significant influence of biophilic design on enhancing guest emotional responses, perceived quality, and behavioral intentions in hotel environments (Lee, 2019). However, most biophilic design studies focus on exposure to plants, water, or natural light rather than implementing various biophilic design attributes in environmental settings. In this experimental study, three high-fidelity virtual hotel lobbies were created and used to test how subjects responded to direct biophilic, indirect biophilic, and non-biophilic conditions. In addition, the effect of biophilic design on participants' place attachment was one of the focuses of this study. Place attachment refers to emotional bonds between individuals and their surrounding physical environments (Low and Altman 1992), and it has been discussed as an underlying mechanism that drives the association between nature and human well-being. This study explored the impact of biophilic design on guest responses and the relation with place attachment, anticipated service

quality, and satisfaction in hotel settings. For stimuli, three 3D models of the hotel lobbies were created in Revit with Twinmotion: direct and indirect biophilic and non-biophilic. For the creation of the two biophilic conditions, attributes categorized by Kellert and Calabrese (2015) were used. A within-subjects experiment was conducted (N = 90) with participants recruited via Amazon Mturk. Subjects were assigned to one of the three environments in random order. After viewing the first environment, they were asked to answer questionnaires on emotional responses (pleasure and arousal, positive and negative affect), anticipated service quality (SERVQUAL), place attachment, and satisfaction. Then, they were assigned to the other two environments in the same process repeated. A Qualtrics web-based survey platform was used for the study. The findings suggest the environmental condition is a significant predictor for positive guest responses. Participants responded with higher scores for pleasure, positive emotions, anticipated service quality, place attachment, and satisfaction in the biophilic conditions than the nonbiophilic. The differences among guest responses between direct and non-biophilic conditions were significant in all variables. Between indirect and non-biophilic conditions, the trends of higher scores were observed in the indirect than in the non-biophilic, but no statistically significant differences were shown. The results indicated that the direct biophilic design most positively influenced guest responses, and the biophilic conditions were more effective on positive guest responses than the non-biophilic. Also, a strongly significant relation of biophilic design with place attachment was shown. The empirical findings of this study on guest responses elicited by different types of biophilic design contribute to providing useful guidelines for practical implications of biophilic design in the hotel environment.

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### APPENDIX



Figure 1. Hotel lobby - direct biophilic condition



Figure 2. Hotel lobby - indirect biophilic condition



Figure 3. Hotel lobby - non-biophilic condition

# Students & Perceptions of Wellbeing in Campus Buildings: A Study of University Classrooms and Lounges

Amanda Gale, University of North Carolina Greensboro

### ABSTRACT

Wellbeing is subjective, difficult to assess, and dependent upon predictors of life satisfaction, health, social relationships, and access to basic resources (CDC, 2018). Levels of stress, anxiety, and depression are key measurements of student wellbeing (Larcombe, et al., 2016). Each of these measurements have increased among students (ACHA, 2021). The university environment and culture, defined as student spaces, facilities, and sense of community has been identified by students at an Australian University as an area that could improve their wellbeing (Baik, 2018). Most college students spend at least 11-15 hours attending class and 15 hours preparing for classes each week (NSSE, 2020), it is safe to assume that students spend a fair amount of time in campus buildings. Therefore, the purpose of this study was to understand how students perceive wellbeing to be reflected within university classrooms and lounges. More specifically, how university students define wellbeing and what interior features were perceived as important and most representative of wellbeing. Eleven variables (access to water, daylight, views of nature, and healthy food; opportunities for social interaction and physical activity; presence of indoor plant life, supporting or inclusive messaging, and a variety of seating options; use of color and natural materials) have been identified in literature as factors contributing to student wellbeing (Gale and Marshall-Baker, 2019). However, limited research exists about how physical spaces impact students' wellbeing. As wellbeing continues to be a critical issue on university campuses, there is a need to better understand what design features students identify as impacting their wellbeing. The study included a convenience sample of 39 undergraduate students at a mid-sized university. The questionnaire consisted of 37 items with three sections and was administered online with tablets at the university Student Union. The first section asked participants to provide their definition of wellbeing. The second section asked participants to identify aspects of seven spaces that represented wellbeing using heat mapping questions. An open-ended question was provided for each space requesting the participants describe what they selected within the image and why. Four classrooms and three student lounges were designed to include varying degrees of the variables contributing to wellbeing. Multiple views of each space were included within the questionnaire. The last section asked participants to rate the importance of the 11 attributes identified in literature using a five-point Likert-type scale ranging from not at all important (1) to extremely important (5). Most participants (40.5%) described wellbeing in a holistic manner encompassing both mental and physical health. The spaces rated by the participants as most representative of wellbeing were those that encompassed the most variables (figures 1 & 2). Participants consistently identified people (e.g., scale figures) and furniture as the top features within the images as most influential to their rating of the spaces. Open-ended responses echoed variables identified in literature, confirming the validity of the study's findings. Lastly, participants rated access to daylight, views of nature, and a variety of seating options as the most important features concerning their wellbeing in both classrooms and lounges. A primary value of this study is the validation of the previous qualitative study by Gale and Marshall-Baker (2019) creating a list of variables which can be used for future research. An unexpected finding is the level to which scale figures influenced the results, indicating that non-designers imagined themselves as the "people" within space. Future studies should focus on facilitating the human elements as contributing to factors of well-being.

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| Sector             | 2018  | 2019  | 2020  |
|--------------------|-------|-------|-------|
| Commercial Design  | 32.5% | 42.1% | 14.3% |
| Educational Design | 8.1%  | 2.6%  | 4.8%  |
| Healthcare Design  | 8.1%  | 10.5% | 9.5%  |
| Hospitality Design | 24.3% | 13.2% | 9.5%  |
| Residential Design | 21.6% | 21.1% | 38.1% |
| Retail Design      | 5.4%  | 10.5% | 14.3% |
| Graduate School    | n/a   | n/a   | 9.5%  |

Figure 1: Demonstrating increase in residential design in 2020.



Figure 2: Example of coded data (2007)



Figure 3: Example of coded data (2012)

|   |         |       |       |       |       |    | ST        | UDEN | T COL | DE - 2 | 020  |       |      |       |        |       |        |       |     |       |       |             |     | 1      | 110     | 1     |        |      |
|---|---------|-------|-------|-------|-------|----|-----------|------|-------|--------|------|-------|------|-------|--------|-------|--------|-------|-----|-------|-------|-------------|-----|--------|---------|-------|--------|------|
|   | A       | в     | c     | D     | E     | F  | G         | н    | 1     | 1      | к    | L     | м    | N     | 0      | P     | q      | R     | 5   | Ť     | U     | v           | w   | x      | Y       | z     | TOTALS | N=26 |
| moetings  | 1       |       |       | 1.1   | 1     |    | 1         |      |       |        | 1    | 1.0.0 | 1    | 1     | 1      |       | 1      |       |     | 1.000 | 1.000 | 1 1         | 1   | 1      | 1       |       | 4      |      |
| Out of office experiences                                 |         |       | 1     | 1     | -     |    |           |      |       |        |      |       | 1    |       |        |       |        |       |     |       | 1.1   | -           |     | 1      |         |       | 0      |      |
| * site visits   | 1       |       | 2     |       |       |    |           |      | 1     |        | 1    |       | 1    | 1     |        |       | 1      | a     |     | 1     | 1     | 6           |     | 1      | 10.00   |       | 6      |      |
| installs  |         | 1     |       |       |       | 1  |           | 1    |       |        |      |       |      |       |        |       | 1      |       |     | 1     |       |             | 1   | 1      |         | -     | 5      |      |
| C showrooms   | 1       | 1     | 2 = 1 |       | 1     |    | 5.11      |      |       |        | 1    |       |      |       | 1.     |       | -      |       |     |       | 1     | 1           | 1   | 1000   | 1       |       | 2      |      |
| Technology  | Ś       | 1     |       |       |       |    |           |      |       | 1      |      |       | 1    | 1     | 1      |       |        |       |     | 1     |       |             |     |        |         |       | 6      |      |
| Specific project  | 1       |       |       | 1     | 1     |    | 4         |      | 1.1   |        | 1 3  |       | 1.1  |       |        | 1     |        | 1 1 1 |     | 1.    |       | 1           |     | 11.00  |         |       | 1      |      |
| Specific topic/task                                       | 1       |       | 2     | 1     | 1     | 1  | 1         | 1    | 1     | 1      |      |       |      |       |        | 2     | -      | -     | -   |       |       | 1.000       |     | 1      |         |       | 7      |      |
| hids  |         | 1.1.1 | 1     | 1.7   | 1.    |    | 1.27      |      |       |        | 1000 | 2 - 2 | -    |       |        |       |        | 1.12  | 1   | 2     | 1     |             |     | 17. 25 | Sec. 46 |       | 0      |      |
| pricing/budget  |         | 1.1   | 1     | 1122  | 1     |    | V = 1     |      | 1.1.1 |        | 1    |       | 1    | 1     | 1      | 1     |        |       | 1   |       | 1     | 1           |     | 1752   | 1       | -     | 4      |      |
| cds.  |         |       | =     | 1     | 5.2.1 |    | 6-14      |      |       |        |      | 1     | 1.00 |       | 11     | -     | 1      | 222   |     | 2 === | 1.82  | · · · · · · |     | C = 0  | 122.3   | 1.1.1 | 0      |      |
| specification/finishes                                    |         | -     | -     |       | 1     | 1  | -         | 1    | -     |        |      | 1     | 1    |       | 1      |       |        |       |     |       | 1     | 1           |     | 1      | -       | 1     | 6      |      |
| design process  |         |       |       | D. 0  |       |    | 1.        |      |       | 1      |      | 1     |      | 1     | 1      |       |        |       | . 7 |       | R and |             |     | 1. 8   | 1.1     |       | 1      |      |
|   |         |       |       |       |       |    |           |      |       |        |      |       |      |       |        |       |        |       |     |       |       |             |     |        |         |       | 0      |      |
| Notes:  | -       | -     |       |       |       |    |           | E    | 10.00 | -      | F    | 0     |      |       |        | 1     | 17 mil |       |     |       | 1     | 1:          | 1   | L      |         | L     | 0      |      |
| Mentoring Theme   |         |       |       | 1     | 1     |    | $0 \le 0$ |      | 12.5  | -      | 2.25 | 5     | -    |       | 11     | 12.54 |        | 204   |     | 5 T   | 1     |             | 1   | Y      | 12.15   |       | 0      |      |
| Work/Life Balance theme                                   |         |       | 2 1   | 1     |       | 1  | 1777      | 1. 1 | 100   |        | 1.00 | 1 - 1 | 01   |       |        | 100   | 12 11  | 1.2.4 |     |       | 1     | -           | 1   | 1.000  | 1000    | 1     | 0      |      |
| Networking  |         |       | _     |       | 1 1   |    | 1.1       | 1    | 1.1   |        |      | 0.11  | 3    |       |        |       |        |       |     |       |       | 5 6         |     |        | 1.00    |       | 1      |      |
| Independence "own project"                                | 1       |       |       |       |       |    | 1         | 1    |       |        | 1.   |       | 1    | 1     |        |       | 1      |       | 1   |       |       | 1           |     |        | 1.      |       | 6      |      |
| Business understanding                                    | 1       |       | 1     |       | 1     | 1  | 1         |      |       |        |      | 1     |      | 1     |        |       |        | 1     |     |       |       | C           |     |        |         | - 1   | 8      |      |
| Personal development / skills                             | 1       |       |       | 1     | 1.1   | 1  | 1.1       |      |       |        | 1    | 1     | 01   |       | 1. 1   | 1     |        |       | 13  |       | 1     |             |     | 2      | 1       |       | 1      |      |
| Communication with contractors/clients                    | -       | 1     | 1     | 1     | 1     |    | U 11 - 1  | 1    |       | -      |      | )     | 1.   | 1 - 1 |        |       | 1.0.0  | 1.0.0 |     |       |       | 1           | 1 1 | 00     | 1       | 1     | 4      |      |
|   |         |       |       | 1 - 1 | 1-1   | 11 | 6.00      |      | 27.2  | 1000   | 1.75 | 1 2   | 44   | 1100  | 11 - 1 | 1721  |        | 2.2.2 | 1   | a     | 1-2   | 1.11        | 0   | 6      | 100     |       | 0      | 1    |
|   | -       |       |       |       |       |    | 1         |      |       |        | 1    | 1     |      |       |        |       |        |       |     |       |       |             |     | -      |         |       | 0      |      |
| COVID changes   | 100     |       |       |       |       |    |           |      |       |        |      |       |      |       |        |       |        |       |     |       |       |             |     |        |         |       |        |      |
| No change   |         |       |       |       |       |    | 1         | 1    | 1     | 1      | 1    | 1     |      |       |        |       | 1      |       |     |       |       |             |     |        |         |       |        |      |
| Client interaction changed - less than anticpated         |         |       |       | 1     |       |    |           |      |       |        |      |       |      |       |        | 1     |        |       |     |       |       |             |     |        |         |       | 1      | 1    |
| Change in how business is conducted                       | 1       |       |       |       |       | 1  | 1         |      |       |        |      |       |      | 1     |        |       |        |       |     |       |       | 1           | 1   | 1      |         |       |        |      |
| No Site visits or wanted more visits                      |         |       |       | 1     |       |    |           |      |       |        |      |       |      |       |        | 1     |        |       |     | 1     | 1     |             |     |        | 1       | 1     | 1      |      |
| Lack of work  | 1.00    | 1     | 1     |       |       | 1  |           |      |       |        |      | 1     | 1    |       | 1      |       |        |       |     |       |       |             |     |        | 1       |       |        | 1    |
| Broken Communciation - employee/employer / Lack of collab | oration |       |       |       | 1     |    |           |      |       |        |      |       |      |       |        |       |        |       |     |       |       |             |     | 1      | 1       | 1     |        |      |
| dissastified with availabel jobs                          |         |       |       |       |       |    | 1         |      |       |        |      | 1     | 1    |       | 1      |       |        | 1     | 1   |       |       |             |     |        |         |       | 1      |      |

Figure 4: Example of coded data (2020)

# Practitioners and Policymakers Who Have Advanced Sustainable Design in North Texas: An Oral History Project

Johnnie Stark, University of North Texas

### ABSTRACT

When teaching and researching green building and sustainable design, no documented record exists of significant contributions made by North Texas practitioners to local, regional, and national green building practice and policy. Based on a career combining practice and teaching with access to many of these individuals, the author investigated options. The author's university is located in a large metropolitan region, population over 7.5 million, including major cities, international architectural-design firms and product design centers. As part of the university's library system, an oral history program archive exists, managed by the history department, and retrievable by students, faculty and scholars, both on- and off-campus. The author launched an oral history project to provide a resource acknowledging local and regional contributions to green building milestones. Oral history, a qualitative research method, is an appropriate tactic to address complex issues, accommodate multiple disciplines and engage diverse audiences. In a literature survey, milestones included the completion of some of the first and largest LEED (Leadership in Energy and Environmental Design) certified buildings, the formation of the U.S. Green Building Council North Texas Chapter, and city and State policies requiring sustainable development. Timelines were constructed and chronologies emerged for multiple disciplines resulting in an investigation targeting the 1990's and early 2000's. A range of expertise across ten interviewees from architecture and interior design to environmental investigative journalism communicates the interdisciplinarity of sustainable design. Protocols were dictated by the university's oral history program, and the Oral History Association's Best Practices. Preparation began in 2018, interviews were conducted in 2019, final formatting and coordination with the oral history program continued through 2020 and 2021. Initially, an invitation to participate was

emailed to a targeted group of individuals. When confirmed, a meeting was scheduled to review the project scope, followed by in-person recording sessions, and a final transcription review. Preparation included reviewing the practitioner's resume, gathering information on expertise relative to the green building movement, and developing timelines to contextualize their activities. Although the interviewer did not use a strict script, each interviewee was asked to discuss their background, the context in which they engaged in activities relating to green building, and meaningful experiences that informed their perceptions. All of the interviewees cited the value of the initial meeting in preparing them for the interview. The interviews were audio-recorded, emphasizing the transcription, a retrievable, citable document, as the final outcome. Audio files were submitted to a transcription service, then reviewed multiple times by the author and edited lightly for clarity. The Collection is now posted on the oral history program website. Content includes an introductory overview statement, a photograph, context statement and keywords for each of the ten interviewees. The transcriptions, approximately 9000 words each, are available as bound copies in the oral history archive, reviewable by appointment, and as pdf's requested online. The intent is for all of the transcripts to be digitized and included in the library's digital collections for public consumption. The stories told illustrate interior design contributions to sustainable design practice including and surpassing material specification, life cycle thinking, LEED and WELL categories. Interdisciplinary collaboration is essential requiring understanding not only the complexity and context of a project but often legislative and policy issues as well. The next research goal for the archive is an in-depth thematic analysis.

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# Practitioners and Policymakers Who Have Advanced Sustainable Design in North Texas: An oral history project

#### APPENDIX

#### Item One

The transcriptions of the ten interviewees in the initial oral history project are housed as a Collection on the Oral History Program website. An overview statement introduces the project.

Keywords for each of the interviewees were also submitted to the Oral History Program along with a context statement for each interviewee in addition to the interview transcriptions.

The Keywords are cross-referenced when searching within the Collection.

A 225-word Context Statement was also provided for each of the Interviewees and is visible to the public when searching the Collection.

| Interviewee    | Keywords   |
|----------------|--|
|                |  |
| Zaida Basora   | Architecture, Spanish colonial architecture, green building codes, public works      |
|                | policy, legislation, high-performance buildings, project administration              |
| Denise Bates   | Interior design, workplace planning, project document technologies, green building   |
|                | programs, occupant wellness  |
| Mary Dickinson | Interior design, material health, environmental health, healthy materials research,  |
|                | healthcare design  |
| Don Ferrier    | Green building, custom home sustainable design, earth-sheltered construction,        |
|                | high-performance construction technologies, sustainable methods prototyping          |
| Howard Garrett | Landscape architecture, natural organics, organic gardening, arborist, native        |
|                | landscaping, organic land management   |
| Stan Ingman    | Higher education, social sciences, applied research, sustainable communities,        |
|                | public health, affordable housing  |
| Randy Loftis   | Higher education, journalism, investigative reporting, journalism education,         |
|                | environmental justice, environmental policy  |
| Mitzi Mills    | Product design and distribution, commercial textile industry, green product          |
|                | certifications, material health technologies, global supply chains                   |
| Gary Olp       | Architecture, green architectural practice, site-based design, passive solar, energy |
|                | optimization, environmental learning centers, people and nature connections          |
| Kirk Teske     | Architecture, green building program leadership, building performance modeling,      |
|                | multidisciplinary platforms, sustainable development goals                           |

#### Practitioners and Policymakers Who Have Advanced Sustainable Design in North Texas: Keywords

#### APPENDIX

#### Item Two

#### Zaida Basora, AIA Fellow, Vice President, Huitt-Zollars, Dallas, Texas

#### **Context Statement**

Growing up in Puerto Rico, Zaida Basora was surrounded by Spanish colonial architecture and a culture that celebrated design for people and nature. She came to Dallas in the mid 1980's to study and practice architecture. In the mid 1990's she accepted a position with the City of Dallas in the Public Works department. Nationwide, concerns were being raised about clean waterways and lowering energy consumption, but in Dallas, conversations about conservation were difficult to have. However, by the early 2000's there was interest in energy efficiency and cost savings. For Zaida, attending the USGBC (U.S. Green Building Council) National Conference in Austin in 2002 was a milestone experience. She was at the strategic center of city concerns for resource efficiencies, state budget mandates and the rise of the USGBC. She was adept at leading task forces and building consensus between the community, the building industry, the city staff and the city council. Working with her supervisors in the Assistant City Manager's office, in 2003 she implemented the Dallas Green Building program for city facilities which was the first in the nation. Also in 2003, she was elected to the USGBC National Board of Directors, and played a key role in the formation of the USGBC North Texas Chapter. She continued to push for change, and in 2008, the Dallas Green Building code was adopted.

#### **Item Three**

#### [Excerpts from an interview with Zaida Basora, April 19, 2019]

The excerpts are from the final Word document. While content remained the same, the transcription documents were reformatted by the Oral History Program in accordance with their standards.

#### [Excerpt 01]

Interviewer: When did terms like green design and sustainability become just part of the conversation?

**Zaida**: In Puerto Rico, it was part of what we used. Back in the late '70s, that's what you were looking at. Actually, when I took the exam, the architectural exam in '85, '86 to get licensed, there was a lot of emphasis on the environmental design and solar passive and passive strategies for design.

That sort of went away with all the big box design that we started seeing in the '80s, all of that development. Everything needed to be enclosed, all the big shopping malls.

It wasn't until in the late '90s or early 2000s that we saw that emphasis on environmental design. I don't even think that we called it sustainability until the USGBC [U.S. Green Building Council] started. It was after the oil crisis. It was after we started looking at the toxic substances and all of the emphasis on clean waterways and energy, how to lower consumption because of the energy cost.

It was more of a cost issue than it was an environmental issue. I didn't really see any of that in my early career, working in the private sector. I was working from '83 to about '89 or '90. It was never a part of the conversation.

We're fast-forwarding here quite a bit. I remember when I started working at the city in '95, it was towards the year 2000 that all of the articles started coming out about the need to focus on energy efficiency, lowering consumption, and clean water, and the thought about the toxic chemicals.

All of that started coming out between '95 and the year 2000. Then it started becoming part of the conversation of design, at least here in Dallas. There's other cities in the East Coast and the West Coast that probably were more progressive with those talks, but in Dallas, we weren't focusing on any of that, especially here.

I remember even early on, you'd try to talk about water reduction and energy efficiency. The thought here was that people here wanted the comfort, that whole phrase of, "Everything is bigger in Texas," and, "Everything is more comfortable in Texas." People have the money to spend on whatever they want. It was really a hard conversation to have in Dallas.

It didn't start changing here until the early 2000s. For me, my big moment was when I attended the USGBC conference in Austin in 2002. It wasn't even part of the work that I was doing until 2001 or 2002.

#### [Excerpt 02]

In 2001 is when I first had the opportunity to get involved in a task force with the community. That was very exciting to me. If you think about what's happening in the background between the time I started and then 2001, 2002, the city had over 800 facilities.

That whole pinch of the cost of energy rising and deregulation was what propelled the city to look at how to build better buildings. We have to put it into the context of what was happening in the state, deregulation happening in the legislative session of 2001 to 2002 [Texas Senate Bill 7, 2002, approved deregulation of the Texas utility market].

I think that's when it became effective--was September 1 of 2002. The city manager's office was concerned about what was going to be the effect of that in the budget. At that time, we were paying about \$56 million a year in electricity.

The projections were that the city was going to see about a 20 percent increase, with deregulation, on the city's budget. There was this huge effort to look at, "what can we do internally to change the way we're building our buildings?" Not just the buildings, because we started looking at how to change our fleet. We started looking at a cleaner fleet, the hybrid vehicles.

That whole period of 2000 to 2002 was a period of change internally, but then how do we make that happen? So because I was the person in charge in building services for Public Works in 2001, I had the architects--and I was the architect that was appointed to represent the city architects or the city in the public-private task force that was formed in 2001, 2002 to brainstorm about what would be initiatives that the city could implement to help the city reduce its consumption of electricity-- not just electricity, but it was everything, fuel, energy. It was for the buildings, for the fleet, for everything. That was the start. It was focused on energy.

I think the water came later, although the Water Department always was looking at that 50-year strategic plan for water, and trying to figure out, how do we also change behaviors? From the city perspective, a lot of it focused on, internally, how do we make a difference?

#### [Excerpt 03 - Phase I of the City of Dallas Green Building Code was adopted in 2008]

Interviewer: Were you able to document cost savings then in some areas?

**Zaida**: We did. I think that the approach wasn't as much the financial impact. It was a political will. A political will issue. In 2011, I think that's when Mayor Leppert, he had left council early because he wanted to run first for the Senate. He was no longer there. I didn't have a champion internally at the city because of the changes in administration.

Suddenly, like the whole environmentally friendly council wasn't there, outside of the industry because of the economic downturn, from them receiving the letters from TREC [Texas Real Estate Commission] and the homebuilders -- that they're not going to support this. The city manager's office said we don't want to fight with council, and it better be smooth.

My goal wasn't to justify it financially. My goal was to justify it politically, or, more than anything, my goal was to show that this was good for Dallas and it was working. There was no reason to not move on to phase two. That this was something that we had full community support to do. If we thought about the long-term effect, if we saw the big picture, it was more about the big picture issue.

It's like we're getting really worried here about not having a champion in council, about TREC not wanting this, about homebuilders not wanting this, about the Hispanic contractors. They called me. I had breakfast with John Martinez. I had a meeting with Macey and I said, "Just tell me what doesn't work for you all but we need to make this work. We cannot go back."

I said one message to be sent to the United States and the world and our community that the City of Dallas adopted a green code in 2008. Two years later when it's time to go to phase two, it's not going to happen. We just have to make this work.

I remember standing in front of the task force and telling people, "I just came to this task force today from the city manager's office and I've been asked to stop this, and I said no. And I said some of you here have some letters to the city council saying that you're not in support of this but you've been coming to these meetings all the time."

You guys tell me. I said, "My approach is if we don't want to move forward, phase two is going to start September 1 anyway, with what we adopted two years ago. I said we have an opportunity to improve. We have an opportunity to change but I'm not going to stop that from moving forward.

"If you think that by not collaborating here, phase two is not going to come into effect," I said, "you're wrong because something's going to start September 1." I have to stand in front and say, "I'm not doing this on my own. I'm here to facilitate the work and the collaboration, and I need your help to make this worthwhile."

It worked. I think that they were not expecting for me to be candid and say, "They want me to stop this but I'm not." I worked through it and I have to say that we all hugged in front of council when this passed. Because everybody, Betsy del Monte was there and Macey and Phil Crone from the homebuilders and everybody, we actually said, "we've got to work through this."

#### **Item Four**

#### [Excerpt from interview with Mary Dickinson, Interior Designer, Dallas, Texas, June 25, 2019]

**Interviewer**: So you have responsibilities now with both sustainability in projects and the material performance research lab?

**Mary**: Our material performance research lab--I'm trying to think of when I came into that. It was about four years ago. What happened was, we had our sustainable design group, that was a couple of folks in every office--

And in the industry at large, there seemed to be this thought that we had accomplished sustainability. These initiatives might not be as needed as they had been when we were trying to get the whole effort started.

That has certainly changed. Now, we realize it's a part of our work and we have to continue to have people focused on this. What we were doing is we were setting up that group, in terms of having formalized representatives in every office that made up a larger committee.

Every office could do what they would like in terms of how they wanted to maintain someone focused on sustainability. For the most part, everybody did. Everybody who was a sustainable leader just remained focused as a sustainable leader, local to their office.

What instead we [Perkins and Will Dallas office] did is we've always worked in this area of research. But we really wanted to dive deeper in those areas of sustainability that needed to advance, that needed to have greater innovations in terms of their impact on design...

We had 10 research groups at the time. We had energy, water, materials, all those base major areas that make up sustainability. Since materials was a part of that, it was myself and two others folks that raised ours hands and said we would really love to help lead that effort.

Suzanne Drake is in San Francisco and Max Richter was my other co-director in Vancouver. Max and I continue that effort today.

We got in there and the big research question was, "How do we find the toxicants in materials?" and, "How do we make this easier in the design process and allow our clients to have better information?" That has turned into a whole bunch of different things in terms of what we've been diving into.

Today we're over 1200 products that we've vetted to date. We've issued the new Precautionary List and Transparency site and created a system to maintain that effort. We're working on tracking health impacts, pre- and post occupancy, based on those material selections that made their way into a space, to analyze what difference does it make. We dive into substances.

We work with a lot of chemists and epidemiologists and industrial hygienists on diving into areas where there is not as much clarity that is needed in our profession around particular substances. For example, we did a white paper on antimicrobials. That really helped the industry understand what antimicrobials were and how they can be problematic to human health as opposed to helpful.

That data has really helped inform a lot of rating systems now, such as LEED and WELL, and changing what they incorporate in those rating systems.

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# Impact of the Built Environment on Environmental Literacy in Children

John Gonzalez, Provencio Designs Alana Pulay, Washington State University Minyoung Cerruti, Washington State University

### ABSTRACT

Environmental literacy (EL) creates positive and responsible environmental behaviors, especially when nurtured at a young age (Hollweg et al., 2011). Leading authors on EL, Orr (1989) and Fleischer (2011), stress the importance of positive biophilic associations when developing a child's EL. Zhang et al. (2014) determined a correlation between a child's direct contact with nature and their levels of biophilia later in life. Very little has been reported on the connections between children's EL development and the interior environments they inhabit. This study focused on biophilic design as a possible solution to bridging EL development and interior design. Relevant research questions in this study include: 1) How would biophilic interior environments influence children's EL? 2) How can specific biophilic patterns, connected to EL, be applied to a classroom environment? 3) Would adult educators respond positively to spaces with biophilic design patterns applied to them? This study utilized the 14 Patterns of Biophilic Design (Browning, 2014) as a primary source for tried and tested biophilic design strategies. Each of the fourteen patterns were cross-examined with the North American Association for Environmental Education (NAAEE) framework for EL (Hollweg et al., 2011) along with three other studies, each pertaining to biophilic patterns and child skill acquisition within educational settings (see Appendix page 1). This yielded four patterns most likely to impact EL development: Visual Connection to Nature, Prospect/Refuge, Dynamic & Diffuse Light and Material Connection to Nature. In addition, this study proposed five main desirable outcomes for students and teachers when biophilic patterns are applied. These include: connection to nature, comfort, level of attention, performance and meaningful interaction (see Appendix Page 2). This study gained insight from elementary public-school teachers on the contribution of the selected

biophilic patterns towards supporting student EL. A set of virtual classroom model images, generated from the aforementioned design features and patterns (see Appendix pages 3-4), were tested in association with the five desirable outcomes. Data were collected by means of an online survey questionnaire with 58 items in both closed and open-ended formats. The 5-point Likertscale items ranged from "Not at all" to "Very Much". A pilot test administered to 5 participants revealed an important distinction between questions asking about the needs of students versus teachers, as well as multiple grammatical revisions for Likert-scale questions in the questionnaire. Over 200 email invitations for the survey were sent out to various public elementary school educators within the states of Washington, Arizona, Idaho and Oregon, yielding a total of 22 respondents for the survey. Participants were recruited using publicly available listservs from states' Department of Education websites. Results of the survey indicated three main conclusions: 1) Visual Connection to Nature and Prospect/Refuge patterns should be used as primary design considerations for enhancing EL development. 2) Combining successful features within each model/pattern, as indicated by participants, and applying them minimally within the classroom, will increase connections to nature and comfort (psychological outcomes), while enhancing student performance, interaction and attention (developmental outcomes). This increases environmentally responsible behaviors, which in turn enhances those same developmental outcomes, creating a kind of feedback loop similar to the one found in the NAAEE framework (see Appendix Page 5). This study has identified a method of adapting the NAAEE environmental literacy framework to fit within the context of interior design. 3) The themes identified yield a set of design guidelines for each model/pattern which designers and researchers could test further in future studies.

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# North American Association for Environmental Education (NAAEE) - Domain of Environmental Literacy Framework



### THE FIVE MAIN DESIRABLE OUTCOMES - INTERACTION



# MODEL 1: VISUAL CONNECTION TO NATURE



# MODEL 2: PROSPECT & REFUGE



Appendix Page 3
# MODEL 3: DYNAMIC & DIFFUSE LIGHT



# MODEL 4: MATERIAL CONNECTION TO NATURE



Appendix Page 4

## SELECTIVE CODING STATEMENT - DIAGRAM



Appendix Page 5

# Resiliency and Pivots: A Collection of Stories During a Shared Societal Calamity

Kelley Robinson, Florida State University

## ABSTRACT

Interior environments often reflect the psychological experience and perceptions of their users. The Covid-19 pandemic disrupted domestic life by blurring lines between work, school, and home for many. The porosity of boundaries affected the physicality of domestic space while challenging its occupants' emotional well-being. This phenomenon afforded a unique opportunity to better understand how users were adapting their environments and what these outcomes might predict for future residential spaces. While many households were adjusting to "stay-at-home" directives and searching for lost productivity, others deemed to be essential workers, continued—unsafely—to go to work. This rapid change activated a range of emotional responses, particularly one's ability to cope with the "loss of a sense of normalcy" (Walsh, 2020, p. 901). A newfound "togetherness" sparked novel homegrown procedures for hygiene and reorganization of room contents. This study's purpose was to document shifting interiors within residential settings and users' shared experiences as they managed the stressors from this unwelcomed situation. Walsh (2020) posits that "...resilience involves positive adaptation: regaining the ability to thrive, with the potential for transformation and positive growth forged through the searing experience" (p. 904) and also asserts that working through grief helps shape resilience. Additionally, McLaughlin (2021) discusses the differences between grief and microlosses. The former is associated with the devastating "losses" experienced during this time, i.e., death, while the latter is linked to lost social connections, planned events, or the autonomy of mundane daily decisions previously taken for granted. According to her findings, a "hierarchy of loss" allows individuals to characterize and perhaps diminish their micro-losses; however, the collective toll of these losses is significant when related to the emotional well-being of individuals (p. 124). Another emotion has emerged during this time of crisis—gratitude. Lazarus

and Lazarus (1994) characterize gratitude as an "empathic emotion" based on an individual's ability to identify ways others have positively contributed to one's situation. Evidence of gratitude was observed within the global media outlets at this time, but this presentation explores further occurrences at the micro-level. This study employed both narrative and visual inquiry methods in a grounded theory process that permitted findings to emerge organically (Dohr & Portillo, 2011). The researcher documented the experiences of five American households from November 2020 to January 2021, applying a framework of four patterns established by Alexander et al. (1977). These patterns—the entrance room, bulk storage, the outdoor room, and workspace enclosure—served as a springboard for discussion regarding disruptions within the home sphere. Protocols included conducting remote semi-structured interviews, observing existing and altered floor plans, and collecting photographs taken by the participants. Interviews were transcribed and inductively coded for emerging themes, room reorganization patterns were analyzed, and the photographic documentation was categorized. Participants' temporary and permanent spatial home adaptations revealed ways they sought to cope with the crisis and support health and well-being. These ranged from creative hygiene procedures to moving the family to the workplace. Altered meanings of the home's neighborhood features were also observed, all suggesting that the home was reconceptualized in a variety of ways and levels, reflecting perceptions and responses of resilience, grief, and newfound gratitude toward others. As individuals transition into their own conceived notions of the "new normal," this collection of stories serves as a commentary at a unique moment in time, illustrating participants' narratives of resilience and adaptation within their domestic spaces.

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## Appendix



*Figure 1.* View of the cemetery from the back porch. Photograph provided by the participant, 2021.



Figure 2. Pandemic box at the kitchen entry door. Photograph provided by the participant, 2020.



*Figure 3.* Dry goods in quarantine. Photograph provided by the participant, 2021.



Figure 4. Clean mask procedures. Photograph provided by the participant, 2020.



*Figure 5.* Refrigerator at the front door filled with drinks for delivery drivers. Photograph provided by the participant, 2020.

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# Building Awareness: Testing an evidence-based approach to green building communications in the residence hall

Erin Hamilton, Texas Tech University Laura Cole, University of Missouri Lindsay McManamon, University of Missouri

## ABSTRACT

Recently, green building research has gone beyond engineering solutions to incorporating human dimensions. Within this emerging area of social research is a focus on the educational potential of green buildings and their ability to support sustainability education and environmentally responsible behaviors (ERBs) (e.g., Wu et al., 2017). Within interior environments, the implementation of a unified signage system is one clear channel for promoting awareness and behavior adaptation. Such efforts can be supported by scholarship in conservation psychology that illuminates strategies for promoting ERBs through signage, behavioral prompts, feedback, and amplifying communications of social norms within the building (Abrahamse, Steg, Vlek, & Rothengatter, 2007). However, insights from conservation psychology have not been employed to enhance signage systems in green buildings. To the contrary, signage in many green buildings is either non-existent or fails to engage building occupants (e.g., Cranz et al., 2014). This project explores the efficacy of an evidence-based signage system designed to engage building occupants with visible green building features and related eco-behaviors. In previous work, we proposed "The Mindfulness Model for Green Building Communication." The model targets outcomes of: 1) heightened awareness of green building features, and 2) increased eco-behaviors using insights from the psychology of environmental stewardship and tourism studies. With several undergraduate design students, we have applied this model to the creation of a set of green building signage and digital media that exemplifies best practices for legibility, mindful engagement, and behavioral prompting. We are currently empirically testing the efficacy of the signage system for increasing awareness of green building features and performance of ERBs

within one LEED Gold residence hall. Currently in the midst of data collection, the study design involves a pre- and post-test online survey with students living in one green and one non-green residence hall on a Midwestern college campus. The pre-intervention survey is closed and the signage system will be installed in early October in the green residence hall. A post-intervention survey will be administered in early November to gauge changes in students' energy, water, and materials behaviors as well as changes in awareness of green building features from pre- to postinstallation for students in the green residence hall. A focus group was conducted with residents of the green residence hall during the signage development phase. Initial insights from this focus group and from the pre-installation online survey (n=113) of building residents suggest the signage system will support increased awareness of green building features and ERBs. Current building signage is small and easily overlooked. Focus group students indicated they had not noticed building signage and were only vaguely aware of some of the larger green features, like solar panels and recycling bins. Survey participants predominately identified features with which they interact, e.g., water refilling stations, multi-sort recycling bins, and study tables crafted from on-site trees. Less frequently mentioned are features that are actually accompanied by existing signage e.g., the green roof, and accent walls fashioned from repurposed campus materials. The difference between identified and overlooked green building features could be attributed to the degree to which building occupants must actively engage with the feature and the meager visibility of the existing signage. One of the goals of the proposed signage system is to draw attention to visible green building features and make meaningful connections to occupants' behaviors. Following completion of the study in Fall 2021, we aspire to make the signage system available to green building practitioners, campus sustainability coordinators, and green building certification programs.

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# Tiny Home Experiences using 3D VR Videos: Effects of gender and personality on perception

Anne Seo-young Lee, Cornell University So-Yeon Yoon, Cornell University

### ABSTRACT

Living in a small space is often not an option but a necessity due to challenging emergencies such as COVID-19 and natural disasters. Despite the growing importance and need for small spaces as an inevitable housing option, user experiences with small space living have not been systematically and extensively studied. One approach can be used to investigate the experience of living in a small space is to use a life-scale mockup. This research aims to provide more satisfying small space living experiences using virtual reality (VR) technology to examine if and to what extent selected spatial design elements in small space living and individual differences influence viewers' perceptions of small spaces. The spatial depth (short vs. long) and ceiling height (low vs. high) were manipulated as a 2x2 design. Forty-eight participants were recruited to experience four small home conditions for the experiment: the square footage was fixed as 250 square feet for all four conditions. Participants viewed the four virtual walkthrough videos in random order. Immediately after each video, participants completed a questionnaire regarding their experience in a small space applying the concept of place attachment using the scales of place identity, place dependence, personal sense of place, and partial sense of place (Gifford, 2007; Raymond et al., 2010). For individual differences, data on participants' personality and demographic information including gender were collected. The results showed that participants reported higher place attachment score for the room with short spatial depth than the room with long spatial depth. People might have felt more connected to a room with short spatial depth than one with a long spatial depth because the former seemed more comfortable and appeared larger than the latter. Moreover, males scored higher in personal sense of place after viewing the room with long spatial depth than that with short spatial depth. These results could be interpreted as reflecting the concept of individuals' desired level of privacy (Yildirim et al., 2007). More

extraverted people scored higher in place identity and place dependence when viewing the room with long spatial depth than that with short spatial depth. Regarding ceiling height, extraverted participants scored higher in place dependence when viewing the room with high ceiling height than the room with low ceiling height. The study provides information to decision-makers including designers and architects interested in improving the quality of housings, ultimately offering occupants of small affordable homes or refuge shelters more satisfying experiences.

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## Appendix



Personality

**Spatial Depth** 

Short vs. Long

Figure 1. Research Model of Study

Table 1. Video Screenshots of Virtual Environment



|           | Room 1 Room 2          |                        |  |
|-----------|------------------------|------------------------|--|
| Room Size | 15.81' x 15.81' x 7.5' | 15.81' x 15.81' x 9.5' |  |
| Layout    |                        |                        |  |
|           | Room 3                 | Room 4                 |  |
| Room Size | 10' x 25' x 7.5'       | 10' x 25' x 9.5'       |  |
| Layout    |                        |                        |  |

 Table 2. Four Virtual Reality Small Spaces Conditions

*Note. Room size in width x depth x ceiling height.* 

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# Looking at the Effects of Biophilic Design in Healthcare Environments Through Virtual Reality

Allison Howard, Oklahoma State University

## ABSTRACT

Biophilic Design encourages the use of natural systems and processes within the design of a built environment. The biophilic hypothesis stems from the belief that humans have an innate connection with the natural world and having exposure to the natural world is essential for human wellbeing. Studies have identified that the majority of patients exposed to direct nature and natural patterns reported experiencing less stress and increased coping ability. Despite the emergence in popularity of Biophilic Design research, there is still little research on its overall impact on stress levels in healthcare environments. In this study we developed three virtual healthcare environments. The first environment was used as a control environment and did not include any biophilic elements. The second environment included one biophilic element and the second environment included a combination of biophilic elements. We randomly assigned 60 participants to the three conditions. The participants heart rate and skin conductance levels were measured using Biopac Systems and their pupil dilations were tracked with an HTC Vive Pro Eye VR Head Mounted Display system, while immersed in the virtual environment. These psychophysiological measurements allowed collecting information regarding participants stress, pleasure, arousal, and satisfaction levels as well as cognitive load and fixation. The results suggest that exposure to the Virtual Environments with biophilic design resulted in lower stress levels in participants. Developing this study further could help create guidelines for using biophilic design in healthcare environments.

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# A Theory-Driven Exploration of Educators & Beliefs About Affordances and Socioemotional Development in Early Childhood

Lori Guerrero, Texas Tech University Kristi Gaines, Texas Tech University Malinda Colwell, Texas Tech University Charles Klein, Texas Tech University

## ABSTRACT

Gibson's ecological approach to visual perception and its affordances approach describes a unique relationship between the environment and behavior where affordances are moderated by the individual's size and stage of development. Kytta's exploration of Gibson's theory revealed four types of affordances. Potential affordances consist of every affordance available in the environment even if not perceived by the occupants. Perceived affordances are the affordances the occupants perceive but choose not to act upon. Utilized affordances are acted upon, while shaped affordances occur when the occupants alter the environment to provide different affordances. Kytta was one of the first to explore affordances related to socioemotional development when she identified six affordances for sociality: 1) affords role playing, 2) affords playing rule games, 3) affords playing home, 4) affords playing war, 5) affords being noise, and 6) affords following/sharing adult's businesses. This study further explored affordances in relationship to the socioemotional domain in early childhood. It utilized a survey sent to 538 early childhood educators (ECEs) through the National Coalition for Campus Children's Centers' listserv to collect ECEs' beliefs of physical design features that afford utilized solitary, parallel and cooperative play which are important for socioemotional development in young children. The completion rate was 30% (38/125). The survey provided images of play environments where the ECE participants selected areas on the images that they believe affords the type of play. Afterwards, the participants are prompted with an open-ended question asking why they selected that particular area. The collective clicks on the images created heat-map

images reflecting the ECEs' selections. The qualitative data collected from the open-ended question was analyzed using Strauss's three-part coding method: 1) open, 2) axial, and 3) selective. The findings offer six affordances related to solitary play, seven affordances related to parallel play, and six affordances related to cooperative play. The findings may offer interior designers a different approach to designing early childhood spaces that reflect an environment built of medium, substances and surfaces to explore from an affordances approach.

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Scholarship of Design Research | Social & Environmental | Presentation

# Interior Design Parameters - Influence on Positive Mental Health in Educational Facilities

Emily Morgan, University of Oklahoma

## ABSTRACT

Understanding how the built environment can influence occupant's mental health is critical when designing buildings. This is especially importance for building where users will spend up to seven hours of their time every day (Sparks, 2020). Adolescent aged students have rapidly increasing rates of declining mental health. Blakemore (2018) talks about how many people discredit the adolescent when in reality the adolescent stage is one of the most formative time for brain development. Understanding how an educational environmental setting can influence the mental health of its adolescent occupants is of prime importance to the prevent future onset of depression or mental illness. As indicated in by Dannenberg et al. (2011) in Making Healthy Places mental health can be defined as "A state of well-being in which the individual realizes his or her own potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community," (Dannenberg et al., 2011, p. 387). A research gap analysis was conducted to identify the problem associated with environmental influence on mental health of indoor occupants that has not been addressed adequately in past literature. This goal of this study is to analyze the influence of indoor environmental parameters, such as color, light, connection to nature, sense of place on an adolescent's mental health in an educational setting. The study will identify ways for designers to create the feeling and attachment of place for occupants within an educational setting. Giving the students a chance to develop a relationship with the building should help with creating a healthy and productive environment. This qualitative research study has adopted mixed methods of surveys, interviews, and case study analysis. The data collection method started with a survey of recent high school graduates. Upon the completion of the initial survey, the study will further focus on a one-on-one interview with participants who have experienced an indoor

environmental upgrade of their high school during their tenure. Case study analysis will be performed to study the high school building that went through an indoor environmental upgrade as indicated by the interview participants. A further look into the environments will lead to design suggestions that could improve the environment towards creating positive influences on mental health. 127 survey participants indicated that their high school building went through a renovation during their school years. The participants shared their experience about how the indoor environmental parameters influenced their sense of space before, during and after renovation. 50% of participants indicated that overall interior lighting and its effect on performance improved after renovation while 33% and 17% indicated that they remained same or became worse respectively. When asked about the influence of interior color as a design element on their overall performance, 53% indicated improvement with renovation while 23% and 25% indicated that they remained same or deteriorated. Additional data was collected about their connection with nature, sense of place, furniture use and thermal and acoustical quality and how that changed before and after renovation. 68% of respondents indicated that the renovations overall created a better environment than pre-renovations. The result of the initial survey indicates the strong influence of interior environmental improvement and its impact on adolescent academic performance and wellbeing in terms of mental health. During the presentation the author will share the collected data and the identified interior design parameters that influence positive mental health in educational facilities. This information will help create better designs strategies for future projects.

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## Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# Scaffolding for Successful and Equitable Career Readiness Outcomes in a Professional Practice Course

Jessica Bonness, Marymount University

## ABSTRACT

In a Professional Practice elective course with 19 upper-level Interior Design undergraduates at a small private institution where 25% of the students are first-generation (defined as being the first in their family to attend college), a scaffolded series of assignments were given with the goal of achieving greater equity with regard to career-readiness and job search skills. We know that firstgeneration college students experience a "lack of guidance in academic and career choices, absence of future-oriented conversations and lack of a valid network" as compared to their peers with parents who obtained a college degree; the lack of a network and career guidance puts firstgeneration students at a disadvantage when it comes to their first job search, and can result in attrition from the industry or negative career outcomes (Hirudayaraj & McLean, 2018). That being said, all students gearing up for entry level job searches can benefit from robust and intentional preparation. To combat the inequities surrounding career-readiness and to strengthen skills required to support early career professionals in their job searches, students were given a series of highly-structured assignments over the course of a semester that were designed to meet them where they are in terms of soft skills and job search resources, with accommodations within each assignment to provide for meaningful engagement for a range of students with different backgrounds and skillsets. The course objectives focused on communication skills, development of a portfolio, and networking and interviewing skills, and the assignments aimed to increase students' professional contacts significantly. Garriott argues that it is critical to address the responsibility of institutional factors that may limit the success of students who are

disadvantaged when it comes to career readiness due to their backgrounds and lived experiences (2020). With the intent of assuming this responsibility and goal of increasing equity, the series of scaffolded assignments that were given to students ranged from very rudimentary in the beginning to more complex and higher-value at the conclusion of the course (see Appendix A and Appendix B). Multiple opportunities to engage with professionals were provided, and these ranged from simple social interactions to formal critiques of student work; at every opportunity, guidance was given about basic procedures and soft-skills so that no student was left behind due to lack of knowledge or experience. Additionally, professionals were pre-screened and prepared to engage with students at their current level, and were only invited to participate if they were interested in helping these students grow as opposed to simply providing criticism. The intent of the course was that at the end of the semester, all students, regardless of background or prior experience, would be equipped with the basic tools and experiences to be able to function competitively in job search, interview, and networking situations, and all students would be equipped with greater communications skills, better portfolios, and increased networking and interviewing-related soft-skills than they started with in a way that levels the playing field substantially. Students were consulted at the beginning of the course with regard to their careerreadiness and job search skills, and later evaluated their skills and confidence at the end of the course, which demonstrated their meaningful gains and re-commitment to the profession. It was notable that students identified a variety of assignments as "most helpful," which underscores the need for a variety of skill building activities, including those that are most basic (see Appendix C). Additionally, professionals who contributed to the course were consulted as to their experiences with the students and the methods of their interactions, which will help to improve upon subsequent iterations of the course.

#### REFERENCES

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### APPENDIX A: List of Scaffolded Assignments and Their Primary Objectives

| Assignment  | Primarily     | Primarily        | Primarily      | Involves                |
|---|---------------|------------------|----------------|-------------------------|
| Description   | Develops      | Develops         | Develops       | Interaction with        |
|   | Communication | Portfolio Skills | Networking and | and/or<br>Feedback from |
|   | SKIIIS        |                  | Skills         | Practicina              |
|   |               |                  |                | Professionals           |
| Icebreaker  |               |                  |                |                         |
| Brief team-building activity to mimic the types of team-building activities one would |               |                  |                |                         |
| encounter in a workplace.   |               |                  |                |                         |
| Email-Signature Creation  |               |                  |                |                         |
| Instruction on and refinement of creation of appropriate, effective, professional     |               |                  |                |                         |
| email signatures for ID students.   |               |                  |                |                         |
| Linked-In Page  |               |                  |                |                         |
| Instruction on and creation of Linked-In pages for students, including discussion     |               |                  |                |                         |
| about how to navigate making connections and generate content.                        |               |                  |                |                         |
| Job Application Email Assignment  |               |                  |                |                         |
| Mock exercise to simulate the process of applying to a position via email, including  |               |                  |                |                         |
| responding to an offer (initiating negotiation process) and sending thank you notes.  |               |                  |                |                         |
| Design Writing Assignment   |               |                  |                |                         |
| Examining various types of written communication about design, including hearing      |               |                  |                |                         |
| from a panel of writers, reading and writing original articles, and refining          |               |                  |                |                         |
| communications skills through peer and instructor critique.                           |               |                  |                |                         |
| Portfolio Panel   |               |                  |                |                         |
| Interacting with a panel of professionals who hire + entry-level employees they       |               |                  |                |                         |
| recently hired, to learn about successful portfolios and portfolio pitfalls.          |               |                  |                |                         |
| Portfolio Critiques with Professionals  |               |                  |                |                         |
| Engaging with professionals via method of choice to present portfolio and receive     |               |                  |                |                         |
| actionable feedback. Scheduling and arranging the presentation was part of the        |               |                  |                |                         |
| assignment. Matches were made intentionally by instructor.                            |               |                  |                |                         |
| Mock Interview Prep and Assignments   |               |                  |                |                         |
| Preparation for mock interviews, and discussions to guide intentional pairings.       |               |                  |                |                         |
| Mock Mock Interview   |               |                  |                |                         |
| Practice mock interviews among students, including structured feedback.               |               |                  |                |                         |
| Actual Mock Interviews  |               |                  |                |                         |
| Students participated in two mock interviews with two professionals each, and         |               |                  |                |                         |
| brought along their revised portfolios from the previous exercise.                    |               |                  |                |                         |

#### **APPENDIX B: Timeline of Assignments**



develop Interviewing/Networking skills.

#### **APPENDIX C: Results**

MOST Impactful and Confidence-Building Assignments, as identified by students at end of course (# of responses not limited):



Percent of Students More Confident About Their Career-Readiness and Job Search Skills at the End of the Course: 100%

## Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# Professional Preparatory Programming: An Inclusive Approach

Lindsey Bahe, University Nebraska Lincoln David Karle, University Nebraska Lincoln

#### ABSTRACT

Introduction. In response to the realities of the COVID-19 pandemic, a new pilot remote internship preparatory program was established in partnership with local design professionals and ran over the summers of 2020 and 2021. In the beginning, mini courses were developed out of curricular necessity to provide 3rd year interior design students a means to earn required credits while facing a reduction in internship opportunities. Early in the development of the remote internship preparatory program, the team recognized it as an opportunity to develop a series of courses that could engage a diverse student population with meaningful professional learning experiences by using inclusive excellence strategies. With this mindset, the pilot program was developed to: (1) provide intentional professional programming and access to design professionals for students earlier in their academic careers, and (2) reduce the number of obstacles for students to obtain desired educational experiences with design professionals. Program Development & Framework. The remote internship prep program relied on the partnering office's long history of educational outreach and strengths of 'putting people first, advancing design, and building communities.' It was co-developed into three, one-credit, threeweek modules. These modules provided students with remote engagement on a broad range of topics to better understand the larger picture of a professional office and became a new opportunity to learn from design professionals about professional design operational systems in low-risk learning environments. If taken early in a student's academic career, the team believed that the courses would prove to benefit students' future professional pursuits and internship experiences as they would be more likely to understand their role and responsibility within it. Inclusive and Equitable. Our university and college see inclusion as the "active, intentional, and ongoing engagement with diversity—in the curriculum, in the co-curriculum, and in communities (intellectual, social, cultural, geographical) with which individuals might connect in ways that increase awareness, content knowledge, cognitive sophistication, and empathic understanding of the complex ways individuals interact within systems and institutions." (Barker et al., 2019) Since design professions are often labeled as an "exclusive" or "tight-knit" culture, a need exists to bridge the gap and intentionally include interested students, particularly those from underrepresented communities, with professional opportunities. The program achieved inclusivity in four ways: Intellectual Inclusion by appropriately scaffolding knowledge with deliberate and meaningful introductions to professional practice prior to more traditional internship experiences. For nearly 75% of these students, the internship was their first experience "inside" an architectural office. Social Inclusion was achieved by providing students from diverse educational groups, ranging from incoming freshman to graduate students, with opportunities to enroll in the pilot program. Cultural Inclusion occurred by removing traditional methods of awarding internships (design portfolios or GPA). Thus, a wider range of students were able to gain introductory professional experiences and get a "foot in the door" of design offices. Geographic Inclusion through remote/distance learning that allowed students whose home communities are without any professional design offices to participate and have access to design professionals. Results. This emerging model of professional development through accessible learning provides impactful learning experiences for all students regardless of their academic level, academic performance, previous work experience, financial ability, or geographic location. Cultivating inclusive excellence and opens new paths to professional understanding and exposure that previously did not exist in the College.

#### REFERENCES

Barker, Marco, (2019). A Special Report, The First 150 Days: Charting a Path Towards Inclusive Excellence. Accessed June 30, 2019. Pg. 11. (website provided in final presentation)

# IDES 491/891 APMA INTERNSHIP PREP PROGRAM

A virtual internship opportunity with a behind the scenes look at the inner workings of one of most exciting architecture and interior design firms.



MODULE A (1 CREDIT) JUNE 8 - JUNE 12 | MWF 10-11:30AM

## **Firm Life**

Learn about how we work; from our culture to our process and everything in between.

**Firm Structure** 

Take a virtual tour of APMA's offices and learn about how we define organizational structure in a creative culture.

#### **Project Life Cycle**

From inception to ribbon cutting, see how projects get off the ground and off the books.

#### **Community + Client Relationship**

We work hard to nurture relationships. Learn valuable communication skills that impact project success. **MODULE B (1 CREDIT)** JUNE 15 - JUNE 22 | MWF 10-11:30AM

## Design + Construction Considerations

Learn the keys to preparation, flexibility and creative problem solving on-site and in the studio.

#### **Mentoring and Team-Based Practice**

The best projects are the result of collaboration and welcoming different perspectives.

#### Software, Tools, and Technology

See the various ways we use technology to get the best results for and from our clients.

#### **Design Workflow and Review**

Hear from the experts about how to keep an eye on quality while keeping a project on schedule and on budget.

#### **Design and Construction Collaboration**

Learn about how our construction partners and administrators help us realize design intent.

#### 2ND - 5 WEEK SESSION

**MODULE C (1 CREDIT)** JULY 13 - JULY 22 | MWF 10-11:30AM

ΑΡΜΑ

# Design Opportunities

From re-imagining historic buildings, to new construction that inspires; learn about the various opportunities for great design.

#### Pre-Design

Learn the ins and outs of early planning and studies that have big impact on overall design direction.

#### **Historic Preservation and Adaptive Reuse**

See how our dedicated team of historic architecture specialists restore and rethink even the most neglected spaces.

#### **Second Nature Sustainability**

Go beyond the green-washing and learn about sustainable design practices that make the greatest impact.

#### **Beyond the Building**

Environmental graphics, furniture, fixtures and equipment can make or break a space. Learn more from our award winning interior design team.

# Demographic data of 2020 & 2021 Prep Program Participants.



# **Geographic Inclusion.**

Location of students when they participated with remote program.



# 2021 Pre & Post Survey

1 = low 5 = high measuring understanding.



I believe that this mini session will allow me to further understand the process of what goes on throughout a firm so i am more familiar when i get the opportunity to be an intern. 0

I enrolled to get more information into how firms function, how teams function and are made, and how projects are set up.

en

0

0

O

I wanted to obtain a grasp of information that can better prepare me as I progress in the future on possible internships.

I hope to get insight into how firms function outside the tours that I have seen, to see how one processes working on projects, D and to see how designing is different.

I hope to be more confident in the way the firm operates and what is expected throughout the members.

I hope to gain a better understanding of how to work as an intern, in a firm, and how to develop projects in the best way that is beneficial for everyone.

I found it to be a great insight into whats required from an intern and the kind of work they try to achieve. I hadn't done an internship before, so I saw this as an opportunity to better prepare myself for one, and I feel like I really gained some knowledge out of the class. 0

T It allowed me to understand what the typical work and considerations are of a project and the constraints within a project so I have a better idea for what goes on when I get an internship.

The insight that I gained through the mini-session gave me more confidence in getting ready to apply for internships and what it might be like to work in a firm.

These mini-courses were delivered in a very relaxed, convenient fashion and while they may not have been in person; they were tremendous opportunities to listen to a variety of guest speakers talk about their specific roles at APMA; projects that they have worked on; opportunities that they have been given at APMA, etc.


# How did the mini APMA Online Internship Prep session/s impact your professional internship experience?

It provided the base understanding of what a typical day/role is for designers and helped me better understand what was required of me when beginning an internship.

I really enjoyed taking these courses because they helped prepare me for my in-person internship this past summer. I felt that the information they were providing was useful and beneficial to my learning. I had no idea what an actual firm was like so it was very interesting to see and hear from professionals themselves. Several things [from the mini-course] impacted my internship experience. One of which was that I learned more in depth about the design process in real projects, specifically how the pre design effects the overall design path. I also learned more about sustainable practices, which sparked a big interest in how I view projects now. I believe that it should be a bug priority for the future of design as we have so much impact on the planet.

# Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# Integration of inclusive design in the interior design program

Shabboo Valipoor, University of Florida

## ABSTRACT

Design approaches that seek to include as many people as possible have been around since the 1950s. In response to the aftermath of the Second World War, "barrier-free" designers began the early work of making the built environment more accessible to wheelchair users and injured veterans (Maisel et al., 2017). Today, inclusive design is known for promoting environments, products, and systems that work for more people. This approach has continued to gain momentum in all built environment fields, mainly because of growing human diversity and the need for responsive design approaches to address diversity, inclusion, and equality. However, design and architecture practices are still more focused on the needs of able-bodied adults, and designers still face difficulties in putting inclusive design into practice. The limited application is explained by several factors, including the limited integration of inclusive design in university curricula (Heylighen et al., 2017), which leads to a lack of skills or tools to practice inclusivity in design. In response to this need, a new interior design graduate course is being developed as a pilot to gauge student interest and determine its viability. As an active member of the Inclusion, Diversity, Equity and Access committee of the college, the instructor developed this first inclusivity-related course to reflect the values that the committee represents. The focus of the course is on the interaction between human ability (and dis-ability) and the design of the built environment, based on values of equal opportunity and personal empowerment. The following course objectives are identified to stimulate students' learning about current principles, practices, and research in inclusive design: • Develop sensitivity to human variability in relation to the built environment • Identify environmental barriers and facilitators impacting human functioning and quality of life • Understand a range of research methods used to study inclusive design in the built environment • Gain substantive knowledge of at least one particular disabled population

and their environmental needs • Practice effective communication of credible research findings to a wide range of audiences (design and non-design) The course structure includes three modules: (1) Special Populations & Spatial Needs, (2) Literature Analysis & Research Tools, and (3) Evidence-Based Design. In the first module, students gain a clear understanding of what inclusive design is and its importance in the built environment. They explore current knowledge on people with different impairments and their environmental needs. Students are assigned readings, video viewings, and case studies to prepare for each lecture and guest lecture. At the end of this module, students reflect upon their learning by writing a short essay. In the second module, students review different research methods and tools used to study people with changing abilities and the way the physical environment may affect their health and quality of life. They read, analyze, and present relevant research papers. Towards the end of this module, students select their focus area and start mapping the literature on that area. Finally, the focus of the third module is on evidence-based design. Students apply the knowledge that they gained through reviewing the literature to a design project. The final project may vary depending on the composition of the class and students' backgrounds and areas of interest. The course is being taught in the fall of 2021. Examples of lecture content, student assignments, shared resources in the class, responses to the course evaluation, and lessons learned from the pilot for further development of the course will be shared in the presentation.

#### REFERENCES

Heylighen, A., Van der Linden, V., & Van Steenwinkel, I. (2017). Ten questions concerning inclusive design of the built environment. Building and Environment, 114, 507–517.

Maisel, J. L., Steinfeld, E., Basnak, M., Smith, K., & Tauke, M. B. (2017). Inclusive Design: Implementation and Evaluation. Routledge.

#### Example of lecture slides Week 2: What is Inclusive Design?

# 1970s

- Disability Rights movement
- Rehabilitation Act (1973)
- Transition from medical model to social model of disability
- Design became a part of social equity equation.



# 1980s

- Universal Design by Ron Mace (1983)
- · Centers in the US:
  - <u>The Institute for Human-Centered Design (formerly Adaptive Environments)</u>
  - The Center for Inclusive Design & Environmental Access (formerly the Adaptive Environment Lab) (IDeA)
  - The Center for Universal Design (formerly the Center for Accessible Housing)
- CIDA requirement for students' understanding of accommodations for special populations (1988)



# Do we have inclusive environments?



Robert W. W. son Overlack, Urocklyn, W. By Weise Monfron Ld Noberts Camp. 4, Derkeley, UR Ry Loddy Mayture Strey Architecta (LMSA)

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# Moving Forward Why should we care more about Inclusive Design? • Demographic change (next 20 years: 50% increase in older population) • Need for social sustainability

- Power of technology
- Economic advantages

14

#### Example of lecture slides Week 3: **Disability & the Built Environment**





#### Competence-Press Model

Individuals with low personal completence and reduced biological health are more vulnerable to negative effects or the onvironments (Lawton and Nationay, 1973).





# Design for Dementia

#### Weiss Pavilion:

Very large central area with bedrooms in the periphery

- > Open plan for superior negotiability
- Clear visibility to all important spaces to encourage social engagement
- Color coding to support orientation

#### Finding of POE:

"everyday behavior. Including participation in enriched activities and social behavior, did not show a decline in parallel with the decline in basic functions"



# Example of weekly exercises Architecture & Dementia

The purpose of this exercise is to help students understand the impact of environmental factors on the quality of life and well-being among people who share a specific health condition.

In order to successfully complete the exercise:

 From the book: <u>Feddersen, E., & Lüdtke, I. (2014)</u>. Lost in Space: Architecture and Dementia. Walter de Gruyter <u>GmbH.</u> 
 Ø

Read the following chapters:

- Towards a Dementia-Friendly Hospital
- Architectural Space, Acoustics and Dementia
- · Meaningful outdoor spaces for people with dementia
- Based on your learnings, list three supportive environmental solutions/strategies for people with Dementia.
- For each strategy, find images from other resources.
- Create a PowerPoint presentation: describe your strategies and the way they help with creating Dementiafriendly environments.
- Submit your PPT file by Sept 14 at 1:00 pm and present it in class.

○ Tips for Making Effective Presentations ↓
Publication Manual of the American Psychological Association
Purdue Writing Lab - Purdue OWL

The purpose of this assignment is to ensure you are processing your thoughts on the course content as we move on from general knowledge on Special Populations & Spatial Needs to Literature Analysis & Research Tools.

In order to successfully complete this assignment:

- Write a well-crafted, well-revised reflection essay about what you have learned in the first Module.
- The length of your essay must be 3-4 paragraphs.
- Your reflection should include (1) your opinion, (2) evidence to back up your thoughts and/or opinion (APA citation), and maybe (3) your personal experience. Things you can reflect on may include your readings, weekly exercises, videos, lectures, or class discussions.
- · Since this is a reflection on personal learning, you can use the first-person tone in your writing.
- The structure and format of your essay may follow a typical essay writing outline (Intro + body + conclusion).
- Enter your text in the textbox below by Sept 30 at 11:59 pm.

#### Avoid Plagiarism 2

Publication Manual of the American Psychological Association Purdue Writing Lab - Purdue OWL Learn how to use Zotero in 30 minutes @ What is Mendeley?

# Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# The Intersection of Racism and Interior Design

Andrew Baque, Louisiana State University

# ABSTRACT

The challenges of racial diversity, equity, and inclusion are rooted in the heritage and tradition of American Racism (Allen). To be effective in addressing these challenges, interior design students and faculty must choose to identify and acknowledge their unconscious biases nurtured in a collective trust-building process leading to a deeper design awareness of civility and humanity. In response to the murder of George Floyd and the Black Lives Matter movement, the author's institution implemented policies and practices to address the challenges of diversity, equity, and inclusion. First, interior design students and faculty held a focus group to create a diversity and inclusion action plan. In fall 2021, the unit hosted a Racism Untaught (Moses and Mercer) faculty workshop focused on, "cultivating learning environments for people to further explore issues of race and racism (Moses and Mercer)." Building on this momentum, in spring 2021 the author integrated the Racism Untaught Toolkit framework in a third-year undergraduate design studio to assist students in identifying forms of racialized design prior to beginning project research and design. Understanding the nature of bias, developing self-awareness, sharing individual experiences of racism, learning a new language with which to communicate student and faculty collective introspection, and building trust through the collaborative process as a means of finding mutual empathy and our common humanity was essential. Initially, the students were asked to identify racialized design in facilities for the mentally ill homeless community. Emerging from their research were themes suggesting interior design practice as a means for racial reconciliation. This caused them to ask broader questions about the intersection of racism and interior design and consider how design can address multiple racial themes and fill the gaps created by racial divides. The challenge was finding a way to leverage interior design as a tool for healing and equity building. Racialized design became less about physical design and more about programming, design intent and execution. The Racism Untaught Toolkit was helpful with

student introspection and provided students with a template (Lyon and Landsmark) for writing a poem about their personal backgrounds and heritages and having uncomfortable conversations about race. This process created open and supportive research discussions and collaboration and learning about universal racial themes. For example, the school-to prison pipeline (Trappen) and erasure and segregation (Weyeneth) led the student teams to discover and define their own racial themes: Blatant, Hidden and Leftover Racism. The students then synthesized these themes into three distinct adaptive reuse projects and healing strategies. What started as research on racism focused on a specific user group resulted in a journey into the world of racism and the many influences it has on the inequities of human environments. This journey was triggered by a choice to discover the design project through research verses having it clearly defined from the start. Pre and post class reflections confirmed that although the experience was initially unsettling and emotionally taxing, students found great relief from the onboarding process which enabled freedom towards exploratory, open-ended research coupled with self-reflection, awareness, discovery, and mutual collaboration that led to unanticipated outcomes. As one student suggested, "leaning into discomfort is exactly what you have to do in-order to get anything out of this studio." Issues of racism in the built environment and the open-ended research process taught students the value of vulnerability, risk-taking and trust-building in addressing the challenges of racial diversity, equity, and inclusion in designing interiors.

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# I AM FROM STUDENT POEM SAMPLES

#### I am from fufu

From Lawry's seasoned salt and jet-puffed marshmallow creme I am from the loving blend of West Africa and upstate New York; strong, black, and soft

I am from the delicate white petals of magnolia flowers I'm from originality and modern heritage

From and

I'm from love and passive aggressiveness and slammed doors From make sure you look both ways and be polite and do what they tell you

I'm from Sunday school classes taught in another language

I'm from Austin and Nigeria and Great Britain and France and Ireland

I'm from hash browns and fish stew and tuna melts

From the reincarnation of a sister

The inheritance of my name, passed down for generations

Baby shoes, Igbo masks, and memories of a family

Tucked away in boxes

My story, my history

Me.

\*\*\*

I am from Dim Sum

From the Cantonese Embroidery and Jade Sculpture

I am from the 2,000 years old maritime heritage and starting points of the old Silk Road,

Peaceful, Chaotic, finding your own peace while sipping tea in chaotic surroundings

I am from Kapok Flower,

A gigantic tree of the tropical forest canopy and emergent layer I'm from the Lantern Festival and always laugh together.

From and

I'm from the Sipping Tea and Playing Mahjong From a Dancer and an Artist I'm from the Pearl River, the open door to China and extensive river system that lie at the bottom of the river in the section that flows through the city I'm from Guangzhou The Roast Duck and Stir-Fried Rice Noodles The hard-working women raising eight children by herself The Legend of Five Goats, he Saviors of my home Helped us through hunger, helped us through hard time Jade, the Stone of Heaven Symbol of prosperity, success, and good luck. Symbol of renewal, longevity, and immortality. \*\*\*

#### I am from

From hair bubbles and barrettes I am from the Shade on the front porch on a hot summer day, skin getting more brown until the sun goes down I am from Crepe Myrtle Trees, covered in wrinkled pink or white flower petals I'm from second lines and rhythm that lives within your soul From and I'm from the howyadoin's and was-hanin's From "finish your food before you drink" and "this enough rice for you?" I'm from Catholics, Baptist I'm from . the Weavers and Sevalia's Hot sausage in the gumbo, bell peppers and onions on the burgers From the bass in Grannys voice, bouncing off the walls, and echoing through the halls To the sound of Mimi's voice, proud and loud, coming from the imperceptible crowd The living rooms covered in pictures of their grandchildren I'm from the oak tree that survives every Hurricane, branches thick and roots deep like a black girl's hair.

#### LEFTOVER RACISM TEAM COLLABORATION

#### **Racism Untaugt: Racialized Design**



**Revealing & Unlearning Racialized Design** 

Racism Untaught is Focused on Cultivating Learning Environments for People to Further Explore Issues of Race and Racism, from the Obvious to the Invisible.

#### **Defining Racism Untaught**

Racism Untaught defines racism as the conscious or subconscious belief and/or action that supports the social construct of race as the pri-may determinant of human capacities, and that the most predominant race is inherently superior, (prejudice + power over), i.e. the White race over People of Color in the United States. Racism Intaught was not created to prove that racism exist in design, it was created to reveal how deep it runs and how to create design approaches that create an anti-racist culture.

Racist culture. Racism Untaught is a toolkit that uses the design research process Reachen Unstageff is a toolkit that uses the design research process to assist participants in identifying factorisated Design - design that per-pendicular the second second second second second second second protoches. This toolkit was developed by Lias Mercer. Advisitant Prefexesor of Arabit Design, and Terres Moses, Assistant Professor of Graphit Design, and Terres Moses, Assistant Professor of Graphit Design at the University of Minecolas's College of Design and the Director of Design at the University of Minecolas's College of Design and the Director of Design Lastice. The toolkit is meant for educators, students, and organizations inter-

ested in uncovering design that perpetuates elements of racism and cre ating artifacts, systems, and/or experiences that help solve elements of racism. Racism Untaught was originally developed due to an identified

racism. Racism Untaught was originally developed due to an identified app and opportunity of exclassion to forse conversations and elemining app and opportunity of exclassion to forse conversations and elemining items. Official thinking, and diverse forms of making. In helps exclassion and eganization possess the tools necessary to foster conversations and learning environments with a focus on diversity foster conversations and learning environments with a focus on diversity foster conversations and learning environments with a focus on diversity foster conversations and learning environments with a focus on diversity for an official tracking and our conversation of the second second and focus on an identity and our conflue propertunities them (essential) invikable; in and how we and our conflue spectrations them (essential) invikable; invitable of confluence and contract spectrations them (essential) invikable; invitable of confluence and contract spectrations that experiments of the spectration of the second secon

#### Context

Use the terms in this deck to create around the design challenge (artifact, system, or experience) and discuss how oppressions shows up in the world around us. Next, discuss how your design challenge shows up in the levels of oppression to help you in creating cultural change.



#### Where I'm From Ву I am from Hanfu.

From cherry and seafood I am from the major sub-provincial port city port city historically, attractively, foggy I am from day-lily, The showy flowers with memories from hometown and family I'm from dumplings and Beijing Op-era

Fin instantiation of the second secon

I'm from Dalian crabs , handmade noodle From the old Japanese style house in Dalian The instructor of Beijing Opera In my closet, and my bookshelf A treasured memory can warm heart.

#### **Racial Artifact**





Student Phot

tudent Phot

Where I'm From

I am from sitting hair drvers

From pattern styling cream and pink

I am from the deep south but city north

Old, reserved, sweet as vanilla ice

By

girls, soccer games, petty sister fights, and "oh your poor father" I am from water oak trees ready to

cream I am from ripe fall pecan trees I'm from romping across the cane river bankFrom Oliphant and Monette I'm from the Good Friday crawfish boils and heated games of taboo From the Russian toothpick story and everything is legal until you get caught I'm from being far from god's mercy, empty church peer Fail from water oak trees ready to get tost in. I'm from shoving 50 people in one house for vacation and thinking we're funnier than we are. From Tommy and Pam. I'm from the 20 minutes late to church on Sundays and very high exempty church pews I'm from Natchitoches, Louisiana and pectations. From "you air-conditioning outside? and "We're having dinner at a new french restaurant called the Messon Nanie's House, rice & gravy, Sunday Name's House, nee & gravy, Sunday morning breakfast From the time I read my dad's old year-book love notes The dance battles with my cousins, Grandma Glo's house From remembering loved ones who have moved on without us l'm from By grace you have been I'm from by gover y... saved through faith. I'm from Lafayette, Louisiana, chick-en and sausage gumbo and crawfish. The oh when the saints go marching in and geaux tigers. From Laissez les bons temps rouler

#### In this research we are defining each as:

- Artifacts Objects that are the result of human constructs.
- Experiences Something personally encountered, undergone or lived through. Systems – An organized set of doctrines, ideas, or principles usually intended to explain the arrangement or working of a systematic whole.

#### Define

Use qualitative and quantitative methods and theories to define how you might approach your design challenge. Next, in the box above, create a thesis question to help focus your design challenge.



#### Narrative

Encircle Control of the second set is a scalar by driving segregation tacking and there appression of black operation from the second segregation tacking and there appression of black operation tacking and there are not second segregation tacking and there appression of black operation tacking and there are not second segregation are not second segregation and there are not segregation tacking and there are not second segregation are not second segregation and there are not second segregation and there are not second segregation are not second segregation and there are not segregation are not second second second second segregation are not second se



nert and fundraking. Good Samutikaw Warvhy Nosipital affittiding opened in 1952. For 20 pears, Good Samutikaw Warvhy Nosipital affittiding vaculsavly for black nurses in Columbia". It provided medical care to the otherwise neglected black community, Neuveer, over the years the facility accumulated origining details due to the lack of defaunt funding they revealed as opposed to the white hospitals in certa-newly ball. Richland Memorial Respital, Insvitably forced Good Sam to Ossian to access to a defaunt participants, priority Comparison, Patients from other hospitals are to Bood Sam to Instaglita warve. The present of the Ministry of the Samutika Comparison of the Samutika Compariso

• up on acrevements or uses and not the success of prominent local black figures in the medical field. Alen University's renovation of dood Sam Hoopital signifies attends travels success to quality healthouter for all. Cood Sam serves as a reminder of how unjust racial systems manifested them-selves in anothecture throughout the Jim Crow era and the lasting effects these buildings have on society today. Not only do these buildings provide insight into the past, but repurposing them "signifies all that progress is all ways nonshift."



The Black Hospital Movement: 1920-1945

Innessa Northington. Essay. In Making a Place for Ourselves the t. 1920-1945, 1-125. New York: Oxford University Press, 1995.

Making a Place for Ourselves the Black Hospital Movement, 1920-1945 examines the struggles of african american physicians' and the black hospital movement. It began in the 1920s when black physi-cians from the two leading medical organizations launched the mov-ment in a 'self-help' effort to provide black people with better medical

ment in a "self-help" effort to provide Slads people with better medical facilities. These decision realized the importance of black institutions and their stail role in sustailaning the black medical profession in a time while philamthropy were critical to the continuation of black heapi-tations. Cognizations like the Duble Community fundationaling and while philamthropy were critical to the continuation of black heapi-tical states. Cognizations like the Duble Community fundation Fund offend funccional assistance to black heapitatis that "compati-tions". Cognizations like the Duble Endocument and the Resemutid Fund offend funccional assistance to black heapitatis that "compati-ble"s. 1211. Al Warry Faternal and Gold Samatian (Agaptita) lis Columbia. Scath Carolina "investigations" from the Duble Endocument 6 2965, 2021. Al Warry Faternal and Gold Samatian (Agaptita) lis Columbia. Scath Carolina "investigations" from the Duble Endocument 6 2965, 2021. Al Warry Faternal and Gold Columbia and Endocument 6 2965, 2021. Al Warry Faternal and Gold Columbia Listoparamet 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals in 6 2965, 2021. Al Warry Faternal and Gold Columbia Samatian Heapitals and Ballow Faternal Columbia Samatian Heapitals Faternal Heapitals and Ballow Faternal Market Samatian Heapitals and Heapital Ball Faternal Heapitals and Ballow Faternal Heapitals and Heapitals Attentian Heapitals Attentian Heapitals attentian Heapitals and Heapitals attentian Heapitals attentian Heapitals attentian Heapitals attentian Heapitals attentian Heapitals attentian Heapitals attentiant Heapitals attentian Heapitals attentiant Heapitals attentinten

ble 1995, 120). Both hospitals staff falsified patient records, pocketed

#### **Literature Review** Segregation in United State Healthcare

Hunkele, Kerri L., "Segregation in United States H Crow" (2014). Honors Theses and Capstones. 181 During the Jim Crow Era, many states had segregated laws for pub-During the Jim Cove Ex, many states had segregated laws for pub-lic facilities. No encode on cooperation had require any White female marks to some one cooperation had a state of the second second provide the second second second second second second second erand distict capacity of the second second second second erand distict capacity African American docts to sensus to that in no case shall Negroes and White persons be tagether.<sup>2</sup> At the same time, there were not encoundy African American docts to sensure that the Black population received medical attention at mass equal to White. As a result, African American unues had ulways been in high demand, etecially due to laws such as the 1915 Alabama law that allowed White nurses to refuse to treat African American male patients. The Mississip nurses to refuse to treat African American male patients. The Mississip-jiew also established that medical treatment would be available to Af-rican Americans only after the While patients were all treated. In 3942, the American Red Cross, which had previously turned away African American blood donors, established a new policy that would segregate blood donations of Blacks and White.

Since the segregation laws were established, the medical schools wer exclusive to African Americans, but today are open to all races and ed ucates a variety of people with different ethnicities. In 1940, six of thin teen southern states in the United States had no state-funded medica teen southern states in the United States had to state-funded metical school. The medical facilities showed more segregation on the design of buildings. The hospitals were designed with separate entrances, as the second state of the second state of the second states of the second entrance states and the second states of the second states of the neutral Black patients entirely. Although there was preater equality the way that African American states were being tratest, the environ-ment undermined wait the creates originally thought would be a posi-tive experience To Black patients.

ble 1996, 120), Boh hospitals staff fallfiefe patient records, pockeds onations, and neglected their patients. In 1938, the Dube Endow ment pulled its assistance from both hospitals. The following agged-tations with the hospitals administration representatives resulted in to a needer of the two hospitals, createstational changes, and super-tion by while physicals. Relutatives, they agreed to the endowments terms and etter 14 years of fundamising Good Sammitzna-Wavery (hose 1935, Alfer 21 years of operation, Good-Sam closed is doors and to 1935, Alfer 21 years of operation, Good-Sam closed is doors and to sussive doth in 172 and has taid Baddmode were since. This essay

massive debt in 1972 and has laid abandoned ever since. This essay highlights the highlight of the black hospital movement and the involve-ment of white philanthropy in the success of black facilities in the Jim Crow era. Good Samaritan-Waverly Hospital represents the remnants of racial segregation and the black response to fighting unjust sys-tems in America.

#### The Architecture of Racial Segregation

Weyeneth, R. R. (2005). The architecture of racial segregation: The chal lenges of preserving the problematical past. Santa Barbara, CA: Graduate Pragram in Public Studies, Dept. of History, University of Cal

The Architecture of Racial Segregation: The Challenges of Preserv-ing the Problematical Past describes the impact of rackm and the ide-ology of white supremacy on architecture and design. Racialized design far surpasses social constructs and systems such as separate bathfor surgases social constructs and systems such as separate bain-room, waiting remove, and water fourthains. Recalcable design tables on many located forms, including Esulatab, Egaletistica, and Temporat In the design bady. It is the scalables of early increases the set on such form a particular area. Exclusion first took place in the school system, here ef didn't solve there. Many states manafest evaluation in hospitals, basches, plagnanub, prinom, and even contextrism. Following exclu-panticular area. Exclusion first took place in the school system, here ef didn't solve there. Many states manafest evaluation in hospitals, basches, blagmann, brinns, and even contextrism. Following exclu-rispications' of a wait footing and these facilities were searchy equal calom in which black wings were added to the schooling while hospital basches located and the source added to the schooling while hospital calom in which black wings were added to the schooling while hospital. Coming out of Columbia Respiral was a self-standing displicate black-hospital called Good Samatan Werey Hospita. Sarek, there are end-less examples of displicated real and architecture in the United States such as cours, Honesis, parks, and schools. The tast and less widely and the self-state states and the self-state state states and the second second states and the second states and the Temporal Separation is when a certain race had a designated. Unite set a space. In the source of the second states and states are shown and they were only welcomed in tomo to to shop on Saturdary, Not only were times of day or were designated, but black people and when people were not allowed to use the same entrances and exist to building. The status of the sympatration was papered in 1525. Bealdes houldings architectural partitioning was used in racialized design. All of these forms are just more and more ways of maintaining segregation.

Leftover Racism **Abandoned But Not Forgotten** 

IDEC 2022 Annual Conference | Intersection of Racism and Interior Design Appendix

#### LEFTOVER RACISM TEAM COLLABORATION

**Project Location Map** 

#### **BLATANT RACISM TEAM COLLABORATION**

#### **Good Samaritan-Waverly Hospital: Cyril Spann Civility Center**

**Concept Statement -Duplication to Celebration** 



The Cryll Spann Chillty Center is a multi-purpose revov-tion of the Good Samatina-Waverty Isopalia in Columba, South Carolian. This foremer motical activity is a remnant of the Jim Grow em's racially dhiele architectural practices. 2013 Constitution of the Constitution of the Constitution of the Jim Constitution of the Constitution of the Constitution of the After orbinarity & Department of Afric American Studies. The motical context well as polycol home to the constitu-tions of prominent Basis methods and the Constitution of the After orbinarity & Department of Afric American Studies. The motical context as well as polycol home to the contribu-tions of prominent Basis method and professionals. Good Sam Hospital symbolices the progressive activities to head and even preservance against racial togoty.







**Basement: Blocking Diagram** 







ENSTING SULDING

ADDITION

OURTYARD

SECOND PLOOP

CLASS/ROOVS

WPERENCE BO

สาเองความ

COMPUTERLA

GULLY OFFICE

Second Floor: Blocking Diagram



First Floor: Exisiting Floor Plan Second Floor: Exisiting Floor Plan



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#### **Definition of Racism Untaught**

Racism Untaught is a toolkit that uses the design research process to assist participants Rockaited Design - design that perpetuates elements of racism - and critically assess anti-proaches. This toolkit was develoed by Lisa Mercer, Assistant Professor of Graphic Design -Inis tookick was developed by Usa Mercer, Assistant Professo Urbana-Champaign, School of Art and Design, and Terresa M the University of Minnesota's College of Design and the Direc soliki is meant for educators, students, and organizations in ing design that reproduces elements of racions and oraxing a unitative, synapse da la comparisons that the jusive en-error stream. Record tradingtive sus optimally developed due to an elementaria gua nel optimismo for source neve elementaria de la comparison de la comparison de la comparison ante de la comparison que effecto el consistent de la comparison de la comparison de la comparison de la comparison que effecto en constante design former elexional, comparison de la comparison de la comparison que effecto en constante design former elexional, comparison de la comparison del comparison de la comparison de

#### Context

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Student Photo

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#### Where I'm REALLY from By

I am from fufu I am from fuju From lawry's seasaned salt and jet-puffed marshmallow creme I am from the loving blend of west africa and upstate new york; strong, bleck, and saft I am from the delicate white petals of magnolia flowers Im from originality and modern heritage Utility and Offor tiley and Offor search pusisive aggressiveness and slammed doors sure you look both ways and be police and do what they tell you and you chool classes tought in another language with and Nigeria and Great Britain and France and Ireland t a sister me, passed down for generation and memories of a family

#### Where I'm REALLY from By m Dim Sum

am from tom som om the Cantonese Embroidery and Jade Sculpture am from the 2,000 years old maritime heritage and starting paints of the old Silk Road, eaceful , Chaotic, finding your own peace while sipping tea in chaotic surroundings I an

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Define

ch your design challenge. Next, ir



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#### **BLATANT RACISM TEAM COLLABORATION**

# **BLATANT RACISM**

It Just There

OUR PROJECT The Blatant Racism Team chose to focus on what we found to be a good example of Blatant Racism that is the school-to-prison pipeline - Dunbar High School in Washington D.C. BLATANT RACISM

Defined: Blatant Racism is racism that you can't help but see...It's Just There. It is obvious and self-evident and 'in-your-face'. Blatant Racism is prejudicing communities of color in the design of the physical environment. Blatant racism in the built environment was truly evident during times of segregation for example, where signarge was used in the scala separation of water fountains or in physical design where blacks were separated into different spaces such as being restricted to the balconies of theatres unable to exist in the same space as their white counterparts below. Blatant racism in post segregation is what we sought to investigate. Our research led us to the "School-to-Prison Pipeline" as a prime example of blatant racism today.

#### SCHOOL-TO-PRISON PIPELINE

Defined: The school-to-prison pipeline is the process of criminalizing youth which disproportionately affects minority students. We will be focusing on how this is done in the built environment Analyzing the school-to-prison pipeline from a design standpoint requires one to look at the history of schools and prisons side by side. One must acknowledge the evolution of both and how they correlate to one another.

Healing Strategy: Softer Measures- We are seeking to find ways in which these security measures can be implemented through softer, more friendly design strategies. We believe that student dig reaming subsets; Software real execution of the software in th sion, and other disciplinary incidents. The goal and anticipated outcomes are not only to improve the overall safety of the school, but to also enhance the overall welfare of the school community.

#### **History of the School**



Dunbar High School is a model of the school-to-prison pipe line. The school was originally built in 1917 and served only black children. It was then renovated in the 1970's and continued to serve mostly black children. And finally the school was largely demolished and rebuilt in 2013. Throughout all three of Dunbar High Schools forms, the school-to-prison pipelin has been evident in the design of the school. The 1970's archi tecture was brutalist and based on the concent that black children needed to be controlled, much like a prisoner. Little windows, concrete, and fences created an authoritarian like design.

The 1977 version of Dunbar High School was never meant to operate as a prison. The concepts behind its design stressed flexibility, connection, and liberal pedagogy rooted in cultivating self-policing autonomy in students. The prison-like aspects of the design were mainly attributed to the hard, brutalist ex terior that was experienced from the outside. The image of the school as a prison derived from the building's materiality its massive shapes, and its lack of windows-a commor rend toward energy-saving techniques in the 1970s. Metal detectors and other measures introduced decades later as or-

#### The Dunbar High School Dilemma:

Architecture, Power, and African American Cultural Heritag

d the new proposed 1977 building was fiercely contest is of Dunbar High School being the first public high scho nation and for black edu ent was merged together to form a new vision for the future that relied egregation created changes in educational policy and pedagogy as the new sc

Washington, D.C. Metropolitanrea





#### Literature Review

#### Turning off the School-to-Prison Pipeline

Zero tolerance is a political media memorandum that treats all social probler as if they were security issues. The definition of zero tolerance refers to seve ems from the fact that city police were eiven full s and deport the homeless in the hopes of reducing more onflicts with the principle of trust-building, a central tenet widespread. When applied to schools, the zero-tole adicts the "zero rejection" principle that underlies U.S. special e" that excludes students from regular educ lete failure. A generation of to





school, inviting sunlight into the space with large windows. How-ever, through these windows one is able to see the current prob-lem of the facility that continues to contribute to the school to prison nineline: security. The children of Dunbar High School continued to be surveilled. Upon entering the building you are greet ed by metal detectors and scanners. The layout of the building focused on line of sight for cameras to ensure there was not any space that could not be seen. The problems are contained in a pretty new box and then wrapped with a chain link fence.

#### Washington, D.C.'s Unique Political Status Is Reflected in the Design of Its Schools

ation of a lack o



# SCHOOL TO PRISON PIPELINE

**Dunbar High School** 







Downtown Washington D.C. Dunbar High School Neighborhood

# Healing Strategy Healing Neighborhood

Softer Measures is the theme and overall concept of our Healing Strategy. We seek to promote individual health and wellbeing as a counter measure to the perception that physical surveillance is the only answer to safety and security. To be consistent with the naming of departments within Dunbar High, the Blatant Racism Team is introducing a "Healing Neighborhood" into the academic and physical structure of the campus. The Healing Neighborhood is being proposed on axis opposite the main entry to the main school building. This relationship strengthens the importance of the Healing Neighborhood by having it visible to students after they enter the building and pass through the nuisance of metal detectors and camera surveillances Each of the three team members is proposing their own program as part of the Healing Negleborhood to demonstrate the diversity and comprehensiveness of the options for health, healing and wellbeing. Those options include: 1. Mindfulness and Meditation; 2. Nature and Nurture; and 3. Restorative Justice and the Arts





#### **Existing First Floor**



**Existing Second Floor** 



**Blocking Diagram Bubble Diagram** Texapore & Spore herapitetic Space The appetit Space Therepartic Space curty:rd Learning mining Aria Common Arca UTC Office office Ottos Frat Foo Second 900 Second Floo

# 4

# dree

#### **BLATANT RACISM INDIVIDUAL STUDENT WORK SAMPLE**

#### THE JOURNEY TO HEALING

#### CONCEPT STATEMENT

Restorative justice is quite literally the act of restoring justice where it has been taken away or has not existed. It is not just for children to be intripped of their dignity and treated like prisoners instead of students, further enforcing the school-to-prion pipeline through hards security measures. People deserve to have dignity, without exception. To restore the dignity that was taken away from the induction of Dualer light School, other security measures are implemented as will a proving a space of services to ad in the mental and oreal backet backet.

To accomplish this, an addition was built opposite to the main entrance to the school and the metal detectors that greet you when you step through that main entrance have be altered. The hands security and hand lines are extremely proposentative of the school and provide provide that the school of metal extra relative of the school and the school lines of the school school and the school lines of the school extra other entrances that the promotes banding and which The dedge of the hand if the school and the school. Through of lines, a more digatified metal of exercity created. The architecture and interior of the addition is an organic and free flowing structure and space. This was done to actively go against the representative hash lines of the current structure.

The addition provides space to rentore justice and dignity to the children. Art focuade restorative justice, self-love learning, interactive anxiety reduction, therapy and counseling offices, and longe and common areas. The restorative justice art studie fortune access to a large balacoup for the option of outdoor learning, a wall of visitovs to allow for natural light, and swall of art by artisto of order to rever as impairing interactive access to a large balacoup for the option of outdoor learning, a wall of visitovs to allow for antice allow of an attend light. Therapy and counseling offices, and office to rever as impairing interactive access to a large balacoup to the children of the outdoor learning as a large outdoor wall, overeind in atta and accession and longer of the abstractive access to provide the probability of the addition of the addition. An interactive anxiety reducing space is designed to provide that link goods an index to be reading the addition of the read line and and the rest and the quere balacoup that the rest as large and the rest and longer and the rest and longer and the rest and the quere balacoup to a the rest and the quere balacoup to a start of the addition to rest. The rest and the rest and the quere balacoup to a start of the rest and there the rest and the rest and the rest



#### PRECEDENT STUDIES



Ρ

B U B B L E







BLOCKING

#### HEALING THROUGH RESTORATIVE JUSTICE



SECTION CUTS



#### PERSPECTIVE VIEWS



# Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# An Overseas Student Collaboration: Untold Stories of the Built Environment

Ozge Sade, Cornish College of the Arts Ahmet Sezgin, MEF University

# ABSTRACT

Our proposal for the IDEC 2022 Annual Conference is to present a student project, which is the outcome of an overseas collaboration and partnership between the Interior Architecture students from the US and Architecture students from Turkey. In order to enrich student learning experience in the unavoidable online educational setting during the Fall semester of 2020 - 21academic year, we designed a history of architecture and interiors research project that focused on spaces and designers that were conventionally left out of dominant narratives of design histories. The goal was to put together a document with a global and inclusive approach highlighting designers with various gender, ethnic and racial identities, as well as non-Western geographies, development of Black neighborhoods in the US and inequitable practices in the built environment all over the world. We coordinated synchronous discussion sessions bringing students from the US and Turkey together (despite the 10 hour time difference) in Zoom settings, led students in shaping their research, visuals and writing collaboratively and put together an online booklet as an outcome of this work. (Please see the sample pages in the appendix). This project is relevant to the field of Interior Design with its interdisciplinary layers. It presents the strong relationship between the interiors, architecture and urban context, especially as social, cultural and political issues impact the future of Interior Design more than ever before. Covering these diverse historic, social and political contexts while initiating an inclusive and global history of the built environment is particularly relevant as we shape the future of Interior Design education. It is an imperative example of resiliency in the field of Interior Design that responds to the urgent need to address racial, ethnic and gender inequity in the built environment as well as a global health crisis in the wake of Black Lives Matter and Covid 19. The theoretical and

scholarly background of this project has been shaped by a continuous interest in the efforts to rewrite design history by shifting the gaze from the works of white male heroic characters towards the regions and designers that have been hitherto excluded from the historic accounts. For this purpose, we have been following the work of the Society of Architectural Historians' Historic Interiors Affiliate Group and their research titled "De-centering Whiteness in Design History Resources" and Global Architectural History Teaching Collaborative (GAHTC). (See references for the consulted publications). In order to accomplish this project, we have walked students through the process step by step starting with an annotated bibliography study, continuing with topic selection, sharing and discussing their chosen topics with their peers on the other side of the globe, and collaboratively developing booklet pages by using Illustrator based on the format we provided. (See the appendix for project description and steps taken). Significance of this project can be explained in many layers. Pedagogically, the project provided students from each country with insights, viewpoints, perceptions, methods, and tools, from contexts they had very little knowledge about. Students got to know their peers from different places, cultures, and communicated with them contributing to each others' visions as to what interior design meant in the context of their countries accordingly. They experienced a glimpse of the even more globalized future ahead of them and developed ways to adapt. Academically, students gained critical thinking skills and told stories that challenged established norms. They experienced a complex collaboration overcoming barriers of language, time, place, cultural, political and economic differences.

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Wilson, Mabel O., et al., editors. Race and Modern Architecture: A Critical History From the Enlightenment to the Present, University of Pittsburg Press, 2020.

# The Collective Response: Untold Stories of the Built Environment<sup>i</sup>

This year's theme *Collective Response* is chosen to trigger design thinking in response to the extraordinary conditions we are going through currently. The pandemic and the social justice issues made us rethink our built environment whether it be interiors or urban setting. Questions such as how do we design to keep urban life going and stay healthy? How do we achieve equitable design? How do we uncover the role of underrepresented people in our profession in shaping of our built environment? What opportunities exist in collaborative work in the global scale in responding to the situation? While we have been isolated in our homes, the urge to find ways to collaborate seems to be prevalent in almost every field and we are connected globally, more than ever. So, why not conduct a project with students from the other side of the world?

In the context of this project, you will be asked to create an online booklet in collaboration with students from the other side of the world. Here are the steps:

Step 1: Pick one of the themes provided below (Maximum 3 people can pick the same topic)

**Step 2:** Do a preliminary research on your chosen theme. Create an annotated bibliography with min 5 sources. (Avoid random websites and use Cornish Library, websites of museums, institutions and established newspapers.)

**Step 3:** Present your research on Week 7. Plan on 5-10 min slide presentations. Submit your annotated bibliographies and presentation slides on Canvas. (@Assignment #1)

**Step 4:** Now choose a more focused topic in your area of research. And create a 300 word proposal on the topic you would like to pursue. Present your proposal briefly on Week 11 and submit your text and slides on Canvas (@Assignment #2). Keep in mind that the final version of your paper will be a consistent story about 1500-2000 words when finalized by 12/10.

**Step 5:** Work on finalizing the booklet / exhibit during class time on Week 14. Your end product should contain images, text and a bibliography. Submit pages for the booklet on Canvas @ Booklet pages.

Step 6: Submit the final version of your papers on Canvas by 12/10 (@Final Paper).

#### Project themes<sup>ii</sup>:

- Pandemics in history and their impact on the built environment
- Diverse designers who were left out of historical narratives
- Non-Western modernisms
- Racial segregation / redlining in the US
- Formation of Black neighborhoods

<sup>&</sup>lt;sup>i</sup> The link to the complete online booklet, which is the outcome of this project, is available upon request. It is excluded here because it contains the instructors' names and institutions. See sample pages from the booklet below.

<sup>&</sup>lt;sup>ii</sup> While there are no constraints on scale, interiors should be emphasized in each theme.

# Learning outcomes achieved:

All of the learning outcomes designated for this course are achieved in the context of this assignment. Below is a list of them:

- Critique established narratives in history of interior architecture through discussions
- Recognize design approaches within the global scale with an inclusive attitude
- Identify the impact of conventionally marginalized groups in the history of interior architecture

• Critically evaluate the relations between interior design and socio-political context in written format

| Criteria   |                      | Ratings           | Pts    |
|--|----------------------|-------------------|--------|
| Critical thinking and analysis                             | 10 pts<br>Full Marks | 0 pts<br>No Marks | 10 pts |
| Depth of research  | 8 pts<br>Full Marks  | 0 pts<br>No Marks | 8 pts  |
| Quality of writing<br>Well organized, clear, spell checked | 6 pts<br>Full Marks  | 0 pts<br>No Marks | 6 pts  |
| Citations and bibliography                                 | 6 pts<br>Full Marks  | 0 pts<br>No Marks | 6 pts  |

# Grading rubric for this assignment (Created in Canvas):

#### **GENDERED SPACES**



Hosts, P. "Le Corbusier. The Measures of Mari. Exhibition. June 25/2015.

Gendered spaces with architecture are always related. It is possible to understand from James Mellaar's work al Qatahbydk tent planning in nomadic life. With the transition to modern life, gendered areas have a great impact on the design of houses. Depthe Spain agrees with that in her Gendered Spaces book. The spatial structure of buildings embodies knowledge of social relations, or the taken-for-granted rules that of individuals to each other and to society. Thus, dwellings reflect realities about relations between women and men within the family and in society. The space outside the home becomes that aremain which social relations are reproduced. Gender-status distinctions therefore are played out within the home swell as outside of it.



Vatumore, D.V., Night Time As a Gendered Scape", 2017

In architecture, spaces are shaped according to the roles of men and women. We do not support many common gendered architectural movements, such as adjusting the ventilation system in the workplaces according to the male body temperature, designing the kitchen sizes according to the female body, and Le Corbusier's use of male figures while photographing his designs. Architecture has so far been limited to the roles given to women and men in society. Issues discussed many times in history, such as the discussion of gendered spaces in public areas or workplaces where there is inter-gender contact, have influenced architectural design processes. While designing, we advocate behavior that does not restrict spaces in terms of cender. If you were designing spaces, would the roles assigned to men and women influence your decisions?

sources

Spain D, 2000, Gendered Spaces, The University of North Carolina Press Year, USA. Yilmaz, S. (July,2008), Reflections of Gender Rotes in Daily Life, https://derginerk.corg.ht/en/ download/article-file/503438

> Dila Dil Melissa Gündoğan



46

Yilmaz, S. Reflections of Gender Roles in Daily Life July, 2018.

Gender is a social and cultural concept that bianges and develops at different times and in different geographies. Various factors such as beliefs, religious teachings, ideas and traditions as well as cultural habbits play a role in shaping it. Gendered areas is a concept that separates women and men in different environments. These environments reinforce certain ways of heing a man or a woman and affect the distribution of tasks between men and women. For example, in subsistence farming communities, women control land with crops, which are the main crops of the household, while men control land with crops that bring money for the household. According to Sema Yilmaz, the concept of gender is effective in the daily work section. While women work in the kitchen at home, men spend time in places such as coffeehouses with socializing areas.

# BLACK NEIGBORHOODS IN THE LATE 20TH CENTURY

"Over the past 40 years, poverty among the Inhabitants of U.S. Inner cities has remained stubbornly resistant to public policy prescriptions. Especially for African Americans and Latinos, the gap between their economic web being and that of the mainstream has widened despite persistent and repeated efforts to address the problem."

Karen Chapple & Michael B. Teitz

#### 28

The segregation of black people is the main reason for low incom housing for the black comunity. Black neighborhoods were developed because of black migration to urban areas and the migration continued to swell as time went on. Since 1970 there has been a massive decline on black people moving to heavily populated areas which resulted in black people moving into the suburbs as well as major city centers, segregation in the late. 20th century was a result of white people trying to keep black people out of their neighborhoods. Housing prices were a major contibutor to why black families could only alford to live in these declining neighborhoods. And the racial wealth divide was a major contibutor to why these families could not afford to live in these declining neighborhoods. And the racial wealth divide was a major contibutor to why these familys couldent afford to move out of these horble conditions. Poverty among the residents of U.S. inner cities has remained obstinately resistant to public policy prescriptions over the past 40

years. The gap between their economic well-being and that of the mainstream has widered, particularly for African Americans and Lairos, despite persistent and repeated attempts to address the problem, ther are eight key factors regarding the moial poveryt of the time economic systemic changes, insufficient human resources, prejudice against race and gender, adverse pultural and behavioral causes, segregation of race and wages, migration impacts, lack of endogenous development, and adverse public policy advice. All of these things are important when loaking at poverly in the black comunity but most are overlooked when creating new policies and this is why these comunitys are still in a low incom setting.

New york and ghettos in particular are famous for there stereotype of being a place where drugs are sold, gangs hurt people, murder is at every corner and the mafiars on the prowl. This in truth



View from a Black Neighborhood near Northside, Chicago in 2011. Source: Chicagoreader.com Photo credit: David Schalliol

is not all just a misconception there is a lot of truth in this, in the '60s through the '80s and even now the drug problem in these neighborhoads is skyrocketing, in the late 20th century during the drug boom, it was common to find people selling drugs around poor neighborhoads, some of the most recognizable drug lords and mafia men ran their business here. The problem in these small neighborhoads was only amplified by media such as movies, newspapers and to shows. Because of this, a sense of fear was placed in every person who

lived within and outside of the ghettos. As violence and orime surged through the cities in the late 20th century I was celled upon to have more strict and just penalties for criminals. After new regulations were set into action it was clear there was a racial bias at day, more and more people of color were being charged for crimes that would normally receive a slap on the wrist or a cliation. The prison system was being filled with african Americans as well as hispanics and many others races besides whites, with these new rules punishments were also stronger, sentences were longer and required more money to be bailed out depending on your race.

#### sources

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Cutler, David M., Edward L. Glaeser, and Jacob L. Vigdor. "The Rise and Decline of The American Ghetto."

Teitz, Michael B. "The Causes of Inner-City Poverty

Adler, Jeffrey S. "Less Crime, More Punishment "The Harlem Ghetto: From Harlem Black History to Harlem Drug Lord s." TheRealStreetz Lila Stach Pandemics and NYC Architecture

With the early twentieth century development of a series of immigration stations, quarantine facilities, and hospitals at the main ports of entry to the United States, the architecture of the border became medicalized."

Guillermo Sánchez Arsuaga

Hospital Flu Ward Walter Reed Hospital Flu ward (ca. 1910-1920). Original from Library of Congress via RawPixel. Edited by William Baldwir

New York is an epitome of urban life. Because pandemics affect population-dense areas disproportionately, artifacts of disease reside prevalent in modern day New York. Stolety prefers to forget tragedy, when at all possible, and look forward. The question is, where do these residual outcomes of health crises lie in architecture? In one of the world's largest cities, there's hiding places for remains—big and small, alke.

Movement in and out of the city has stopped during COVID-19, unlike earlier remedies for mass sickness, which attempted, instead, to divert the flow of travel. During the 1918 Influenza pandemir, NYC was building infrastructure for immigration control. Ellis Island's Immigrant Hospital was considered groundbreaking for its disease control. More than 23.5 million newcomers arrived between 1860 and the 1920s, mostly from Southern and Eastern Europe, Asia, Canada, and Mexico,". Designed by James Knox Taylor, the hospital's architecture became a standard for ensuing proper airflow, social distance, and additional measures of health and safety. Immigrants were screened for health conditions upon arrival in the states, those deemed 'unfit' were sent to the Immigrant Hospital. In theory, these practices attempted to make the public safer, put utimately they, 'entanglied' the social construct of the healthy, productive, and morally pure bady... of the US citizen,'

The hospital on Ellis Island is a testament to large-scale architectural decisions informed by public health, but what about on the small scale? The NYC subway system is a perfect example. Although, stereolypically thought of as dirty, the signature white metro tile we know today, was bein of a vision for cleanliness and public health prestige. The onset of Cholera in the late 1800's led to municipal revision of plumbing, sewege, and transit systems of NYC. 'The development of public hearth in Britein and the United States can be directly travel to the contributions of Edwin Chadwick'. Chadwick's influence of sarilary standards during the Cholers epidemic eventually made its way into sanitarian's standards, who nearmmended in 1880, "white encaustic tiles' would ensure bright appearance, superior cleanliness, and purity". In 1894, the New York Rapid Transit Board haid out stipulations that white tiles should be used for walls. The RTB designed a system that incorporated a, 'concrete floor that lapped the walls by two inches so that there would be a 'sanitary cove' inche so that there in NYC. Subway was completed in 36 years and ran continuously for 115 years. The first time it was closed in history was due to disinfection procedures for COVID-19 in May 2020.

#### sources

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William Baldwin

# Scholarship of Teaching and Learning | Diversity, Equity, & Inclusion | Presentation

# **Practice of Care: Designing for the Invisible**

Jieun Yang, Parsons School of Design, The New School & Habitat Workshop

## ABSTRACT

"Practice of Care" is a semester-long design studio that responded to the changing nature of work and the workplace during the pandemic. The interiors became an even more important aspect of daily life during the months of lockdown. But instead of turning inward, the studio explored the intersection between interiors, architecture, and urban design with a critical reexamination of the practice of care for a safe, just, and fulfilling workplace by turning attention to the invisible labor that is typically excluded from the conversation of work and workplace. The studio investigated blurred boundaries between work and labor, the definition and conditions of "essential work," social and infrastructural support for work, and growing disparity based on the work sector, gender, and race. With the understanding that 75% of Americans cannot work from home, the students had to expand beyond the idea of the workplace as an office for professionals who can safely continue to work from home. They looked into places for essential work, such as grocery stores, fulfillment centers, transit centers, daycares, hospitals, and support spaces for those participating in a less stable gig economy, such as domestic workers, migrant workers, and delivery and rideshare workers. The ideas developed in the studio, however, were not meant to be pandemic-specific. Instead, the studio process revealed deeply embedded problems and chronically neglected conditions for students to reimagine work as a dignified and integral part of civic life through practicing design with care. Each student decided on the topic of research, target demographic, and site. Many drew from their personal experiences and their encounters with essential workers or a community needing help. The process and outcome were as diverse as the geographical diversity of the sites, but the projects ran through two major throughlines. The first group of projects critiqued the current system by providing a solution for the invisible workers in an urban environment. For example, one project researched the poor

working conditions of the food delivery workers in New York City and created a supportive space that functions as a pitstop for bathrooms, rest, charging stations and maintenance on broken bikes and scooters. By locating the project at a street-level storefront space, the project dissolved the threshold between exterior urban conditions and interior space. Another project provided an emergency childcare solution for medical professionals facing urgent calls and additional shifts, especially during the pandemic, that supplements the regular childcare arrangements. Strategically located near multiple hospitals and open 24/7, the project meets daytime needs like remote learning facilities and cafeteria and nighttime, including sleeping pods. The second group addressed the work as a new potential tool to reshape rural and suburban communities. For example, one student's shrinking family farm became a starting point of the research that revealed a lack of access to healthy food in a rural North Carolina town. The project retrofitted an old barn into an education center, restaurant, and shop that can double as a worktraining center to solve the problem of healthy food along with the high unemployment rate. About eight hundred miles north, another project rescued a waterfront structure damaged by a recent hurricane by transforming the space for the community rather than the seasonal tourists with programs such as a farmer's market, snack bars, and a community center. The role of maintenance and the maintainer is essential but often invisible. The studio shines long-overdue attention on the invisible workers who maintained and cared for our lives during the pandemic as the essential workers. More importantly, the intent and outcome of the studio provide a cautiously optimistic outlook on the design and design education's role in helping to bridge the gap of severe inequities and exclusion.

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#### DELIVERY RIDERS PIT-STOP



# 5 minutes stay zone P<sub>ob</sub> ili 20 minutes stay zone P<sub>ob</sub> ili Š Bike Parking Restrooms Lounge Bike Repair Cafeteria









# CHILDCARE FOR HEALTHCARE WORKERS









#### FARM RESTORATION







THE HUB: A CO-OP COMMUNITY FOR DOMESTIC WORKERS











# Scholarship of Teaching and Learning | Globalism & Multiculturalism | Presentation

# Promoting Global Citizenship: International Virtual Exchange as a part of the Design Process

Wendi Hulme, Fanshawe College Kristi Julian, Middle Tennessee State University

# ABSTRACT

Faced with social, cultural, environmental, political, and economic global issues across an interconnected world, interior design graduates must be equipped with global competence as they enter the profession of Interior Design and collaboratively address these issues with solutions that will make positive impacts locally, nationally and globally. While the inclusion of global context in Interior Design education is not new, international virtual exchange (VE) projects offer an experiential strategy to insert global contexts into the design process for the purpose of promoting global citizenship in interior design students and graduates. Global competence includes the ability to identify and research global issues, recognize and integrate various perspectives, communicate and collaborate effectively, and develop strategic solutions (Mansilla & Jackson, 2013), which lay the foundation for global citizenship. Through their experiences, students can gain self-awareness, cultural empathy and guiding principles for decision making, propelling them toward taking action and choosing to be global citizens (Green, 2012). Essentially, global citizenship comes from recognizing their role in the global community and their responsibility to do something as global citizens; integrating aspects of global citizenship as part of the early stages of the design process best ensures students realize this (Kucko, 2016). International, multidisciplinary VE projects provide students with global competence through research on global issues, experiences with international communication and collaboration, and multicultural perspectives shared during the project. In the international, multidisciplinary VE project that has taken place each year since 2018 between four higher education institutions located in Canada, USA, Germany and Portugal, students from interior design, tourism and business programs across the world have collaborated in teams to research

and address global issues: Sustainability and Covid-19. All students in the project are required to work both independently and in teams to complete six tasks culminating in presentations at a virtual conference. The series of tasks begins with independent, student self-evaluations relating to the global topic before students conduct interviews with their international student partners on culture and the global topic. The student presentations at the virtual conference are focused on one of five categories of the global topic and are presented through the lens of their programs' discipline which is then followed by student reflections. This presentation will focus on the interior design students in the VE project and the role the project played in developing students' global citizenship. This VE project was a part of second-year and third-year interior design studio courses from the Canadian and USA institutions and took place prior to and/or during the programming phase of design projects in which students implemented design strategies identified in the VE project. In adjacent and subsequent coursework, the interior design students continued to demonstrate a sense of agency for the global issues addressed in the VE project stemming from their research, experience and acquired cultural awareness, but more significantly from their revelation of their personal contribution or impact on the global issue learned from self-evaluation and self-reflection during the project. Student research, reflections, presentations, and design solutions continue to reveal the expanding impact of the VE project on their global thinking during the design process as emerging global citizens. The students' ability to see themselves as a player in the global community inspired them to act as a player in their discipline-specific global solutions and to make the choice to be global citizens.

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# Appendix A

## Virtual Exchange Project Plan and Schedule

# **Project Plan / Schedule**

The table below shows an overview of the different phases, tasks and deadlines in this project. Please note that some phases run parallel. Each phase has a deadline when the task is to be completed.

| Phases | Dates                        |  | Task Overview   |
|--------|------------------------------|--|---|
|        | October 7 –<br>October 13    | Task A:<br>Introduction to the<br>Project                  | Welcome Message and Project Orientation from Coordinators   |
| I      | October 14 –<br>October 20   | Task B: Footprint<br>Analysis and<br>Personal log          | Information on Sustainable Footprints; Join<br>one of the five research teams and get<br>acquainted with the field of research;<br>Collect personal data about your footprint<br>behavior |
|        | October 21 –<br>November 3   | Task C: Interviews   | Interviews with students from Canada,<br>Germany, Portugal, and the USA   |
| II     | November 4 –<br>November 10  | Task D: Prepare a<br>Virtual<br>Presentation               | Prepare a presentation  |
| 111    | November 12                  | Task E: Attend and<br>Present at the<br>Virtual Conference | Organize, attend and present at a virtual conference (on Zoom)  |
| IV     | November 18 -<br>November 22 | Task F: Final<br>Documentation &<br>Project Evaluation     | Reflect on the research assignments,<br>compile all documents from your country<br>and complete the online evaluation of the<br>project   |

#### Appendix **B**



Agure 2. Graph showing the breakdown on energy production in each country. From: 62veriment of Canada, 2015; LCO News, 2018; U.S. Energy Information Administration, 2019; and Exampler Institute for Solar Energy Systems ISE, 2019.

#### Sample of Slides from Student Virtual Conference Presentation – Sustainability – 2019





# Appendix C

## Sample of Slides from Student Virtual Conference Presentation – Covid-19 – 2020

| to an Learning from COVID 40       |          |        |        |        |  |  |
|------------------------------------|----------|--------|--------|--------|--|--|
| icts on Learning fro               |          | VID-   | 19     |        |  |  |
|                                    | In-Class | Hybrid | Online | Choose |  |  |
| Canada: Elementary - High School   |          |        |        |        |  |  |
| Canada: Post-Secondary             |          |        |        |        |  |  |
| Germany, Elementary - High School  |          |        | 1      |        |  |  |
| Germany: Post - Secondary          |          |        |        |        |  |  |
| Portugal: Elementary - High School |          |        |        |        |  |  |
| Portugal. Post - Secondary         |          |        |        |        |  |  |
| USA: Elementary - High School      |          |        |        |        |  |  |
| (IRA: Doet - Secondary             |          |        |        |        |  |  |




## Appendix D

## Sample of Post-Project Student Reflections from Virtual Exchange Projects

"Overall, this project has been an eye opener to the things we as humans take for granted in everyday life. I use energy and resources without even thinking about what I could be conserving or doing without. These exercises helped me to see how other countries differ from my country's way of living and how we can improve as a society to better the Earth. I really enjoyed meeting my German and Canadian partners and hearing about their everyday lifestyles. I also enjoyed getting to see exactly how much energy I use on average and what I can do to conserve and live a better everyday life. I can change the amount of time I spend eating out into cooking at home with less wastefulness. I can monitor the amount of energy I don't need such as constantly having lights on or charging my electronics constantly. I can also look into recycling and carpooling/cutting back on unnecessary driving. I was very surprised when asked about compost and regular recycling by my Canadian partner and realized that something that sounded so constant over there was something that I never really considered or utilized. I think if we all connected with one another and learned from each other, we could really make a difference and better the world" (Student, 2019. Sustainability).

"The virtual conference spoke about many different topics that have influenced us as individuals, but also the world as a whole. Many people spoke about the impacts on mental health and the struggles people are dealing with emotionally...The stress that comes with losing your job and not being able to socialize and see your friends and family. Isolation creates anxiety and stress and so many feel this way because of the pandemic and its strict restrictions. Another topic that was largely spoken about was the impact on the environment. The negative impacts relating to more littering and using non-disposable plastic straws, grocery bags and more. The worry that everything needs to be disinfected has created more popularity of single use items. The conference also spoke about how we can choose to move forward in the world...Taking different precautions that we wouldn't have thought of before the pandemic. Creating more indoor and outdoor spaces for proper air flow could be a major consideration for interior designers as well. All aspects of the world can be thought of in different ways to keep the world safe and happy. If we join together as we did during this project process I am sure we can do great things for the world" (Student, 2020. Covid-19).

# Scholarship of Teaching and Learning | History & Theory | Presentation

# **Theory of Origin for Interior Urbanism**

Shai Yeshayahu, Ryerson University

## ABSTRACT

CONTEXT: One decade after his quincentennial birthday, records from exhibits, conferences, journal articles, books, and news outlets display an enduring legacy of Giorgio Vasari, the inventor of art history, art galleries, art museums, and art portfolios. Stitched together as an extended documentary, the lens of current museologists, historians, and biographers portray Vasari as Floretine's most avid influencer. It's an analogy to our contemporary culture where everyone has a curator's status, from the Instagrammer to the chef and fashionista [Stoppard 2020]. But Vasari was not just an organizer; he was a spatial thinker, interior designer, and architect. Was he an expert at all? Could he, or did he, curate a city? And if he did, did it yield the first interior experience at the scale of the city? DISCIPLINE /RELEVANCE: Interior Urbanism is a rising concept from the 20th century [MONU #21 2014]. To many, interior urbanism reflects our current phenomena where 90% of urbanites spend their lives indoors [Cormier 2014]. According to Charles Rice [2016], museums, atriums, mega-hotels, shopping malls, and airports are interior cities housed within a city. These outlooks are the outcome of airconditioned atmospheres [Koolhaas 2002]. Bearing the above reasoning, most historians would not place the birth of interior urbanism in the mid-1500s. At ISSUE: This presentation challenges interior designers to reconsider the genesis of interior urbanism. Based on Vasari's cumulative knowledge for identifying, collecting, and organizing data plus his building accomplishments and comprehensive understanding of scale and urban opus, the presentation situates the interiority of urban-context four hundred years ahead of most urban thinkers. METHOD: Hinging on a web of dispersed interior spaces and linked across one kilometer of Florence's most coveted real estate, this study identifies the origins of interior urbanism from an organizational schema developed by Giorgio Vasari between 1555-1565. The presenter unfolds this theory as a chronological timeline, contextualizing each historical narration in order of appearance and situating the duration of their spatial evolution to this day. Using mapping techniques and snips

of built information, the author orchestrates a progressional animation of Florence's expanding urban fabric from 1CE to the mid-1500s. This process is expanded and verified to contemporaneous time from maps dating back to antiquity [Istituto Geografico Militare N:34241-60], satellite images of Florence from the last fifty years [earthobservatory.nasa.gov], and building plans of the city's existing urban condition [Dennis 1980]. New drawings highlight the shift in spatial definition from 1555 -1565, which support the proposed theory of origin and its evolving effects affecting the inception of urban interiority through the re-spatialization of various proto-elements: church, bridge, town hall, town square, private residence, rural gardens, merchants headquarters, and a corridor. OUTCOMES: Through this work, the author concludes that for 1500 years, the urban fabric of Florence grew physically and visiblyin in tandem with its surrounding context. Yet, suddenly, that context became Vasari's tacit knowledge [Dampey, Busch and Richards 2002], inciting a perceptual shift for interior spaces. This new notoriety revealed how the fabric of the city and its built context are unbounded from their physical and structural limits. Buildings are no longer static. They could unfold their urban presence away from their site-specific exteriors under a new spatial typology for urban thinkers that can now reposition the historical debate of interior urbanism back to the 1500s'.

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Scholarship of Teaching and Learning | Open Track | Presentation

# Educational Implication of Eye-Tracking Research for Experiential Learning through Participatory Neurodesign Practice

Jain Kwon, Colorado State University Laura Malinin, Colorado State University Leah Scolere, Colorado State University Alea Schmidt, Colorado State University Jason Frazier, Colorado State University

# ABSTRACT

This study implements eye-tracking research and participatory design practice in an educational neurodesign program developed for students' experiential learning. As the neuroscientific approach has informed research about cognitive responses to constructed environments, eyetracking has been used in studies on spatial identification, navigation, and wayfinding (Viaene et al., 2016; Tang and Auffrey, 2018; Su et al., 2021). However, the educational implementation has been minimal, especially in real-world design applications concerning end-user experience. With increasing emphasis on evidence-based design (EBD) in the industry, interior design students must be prepared to help lead those efforts. Our neurodesign project involving facultyled research and student-led design application used a college building as a living laboratory to analyze needs for interior branding and a wayfinding system. The faculty team developed the process model bridging empirical research and design practice. The mixed-method model (Figure 1) consists of five phases: 1) participatory visioning and programming, 2) pre-design eye tracking, 3) design application and stakeholder feedback, 4) post-design eye tracking, and 5) fabrication and installation. The interdisciplinary project engaged undergraduate and graduate students from the interior architecture and graphic design programs in the empirical research on first-time visitors' wayfinding and the participatory design practicum, including interactions with stakeholders (Figure 2). For eye-tracking experiments, a wearable eye tracker (50 Hz) and two convenience samples were used: 13 subjects for the pre-design and 25 for the post-design. One

sample was smaller due to temporary restrictions with physical access to the project site. The pre-design experiment included eye tracking in situ (Figure 2), concurrent think-aloud, and retrospective dialogue. During the experiment, each participant was asked, with no time constraint, to navigate through the physical or virtual interior space and find the Dean's office in the building. Semantic mapping was conducted for eye-tracking data-coding focused on gaze fixations. The analysis focused on what participants looked at as they entered the building and what types of visual cues they looked for while navigating the interior space (Figure 3). The researchers also conducted content analyses of the concurrent think-aloud and retrospective dialogues. The study revealed what helped and hindered the participants' coping with visual elements in wayfinding. It also showed the first-time visitors' expectations for place-branding inside the college administration office suite. The findings were integrated into the environmental graphic design processes for proposed interior branding and wayfinding design. Post-design eye tracking, including concurrent think-aloud, followed the design phase, using a virtual walkthrough displayed on a 17-inch screen in a two-foot viewing distance to minimize off-frame gazes. The post-design study aimed to assess the effectiveness of the proposed design solutions, examining the user experience, the perceived wayfinding cues and sequence, and brand identity. The results (Figure 4) showed participants' attention shifted as the student design team intended. The positive results informed students about the application of empirical research as an efficacious intervention that can help design practitioners improve interior occupant experiences. Upon completing the project, the faculty team interviewed the students and stakeholders who participated in the project to assess the learning effectiveness of the neurodesign project and program. The research and project outcomes showed improved depth of student knowledge about EBD methods and the value EBD brings to design practice; increased student interest in research and graduate study, and suggest best practices for developing an undergraduate research program, including eye tracking technologies.

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# APPENDIX

# Figure 1

Neurodesign Process Model for the Project



# Figure 2

### Pre-Design Processes



Participatory visioning and programming with the stakeholders (left) and pre-design eye-tracking experiment (right)

# Figure 3

# Pre-Design Eye-Tracking Outcomes



Fixation points found through pre-design eye-tracking (identifiable school logo and name censored)

# Figure 4

# Post-Design Eye-Tracking Outcomes



Fixation points shifted during post-design eye-tracking (identifiable school logo and names censored)

# Scholarship of Teaching and Learning | Open Track | Presentation

# Remote Global Fabrication: Design and Fabrication of a Full-Scale Installation While Learning Online in the Covid-19 Era

Deborah Schneiderman, Pratt Institute

# ABSTRACT

Topic: The Prefab Interior Options Lab considers temporal space and the movability of the interior environment. It is grounded in research and fabrication processes of prefabricated interiors and investigates environments that are sited within or without architecture. Because these spaces are often movable, they must consider a number of specific criteria, time and duration of use, durability of materials, and transportation of prefabricated elements. The course is structured as a cooperative lab addressing issues of transportable interiors that consider environmental and social sustainability through research and the making of a full-scale installation. The fall 2021 Prefab Options Lab addressed the extreme condition of remote learning. Due to the Covid-19 pandemic, students attended the course online (utilizing Zoom for synchronous classes and Miro for pin-up space) across the world. This caused a critical rethinking of the lab to accommodate the making of a group project for installation that could be fabricated off campus and without access to school facilities Method: To address Covid-19 issues of remote learning and social distancing/filtration, the project was written as a textile exploration. The installation was designed and fabricated in parts with defined materiality (recycled PET felt, clear material, and magnetic snaps or buttons) as a system of panels that could be constructed with the use of a small personal sewing machine. The intention was to make possible interaction across the panels that abide by social distancing requirements and allow for occupation and interaction in the Covid-19 era. Students were asked to consider passage, filtration, an interaction — visual or physical with and/or across the panel. Additionally, they were asked to define program for their panel, for example, a place for rest, to read a book, to display, to have a conversation, perform, etc. None of the students had prior sewing experience

and were taught how to operate their machines and to sew through a series of tutorials as part of class meetings. Context: Conceptually and in addition to Covid-19 considerations for social distancing and air filtration, students investigated issues of community and considered how that interaction with and spatial manipulation of a designed environment can promote agency (1). Use manifests physically in space through user interaction and as that interaction changes, so does the interior environment. A space, perpetually in flux, expresses not only the contributing presence of the community but enacts their agency through the process of interaction and spatial manipulation (2). Elements of the interior that are spatially manipulable, hence adaptable to individual taste have the potential to create emotional attachment, this established connection has sustainable implications as attachment reduces disposability (3). Conclusion/Outcomes: Students in the Prefab Options Lab successfully learned a new making skill, sewing, in an online environment. Through Zoom Platform and Miro Pin up Space, students were able to collaborate and work as a team to successfully design and fabricate a group installation project. The Use of textile not only allowed the students to readily work on full-scale fabrications off campus but also was readily transportable as it is light weight and could be folded and readily mailed across the globe. and Project panels were mailed back to the University are ready for Installation on pipe frames purchased and assembled locally in 2 United States cities. The project is environmentally sustainable though the recycled and compact light-weight materiality, as well as the emotional attachment afforded by agency, which can reduce product disposability. Arguably, the students enrolled in the Prefab Options lab were not hindered by the remote learning consequence of the Covid-19 pandemic as they were able to meet the course objectives to design and fabricate a full-scale group installation.

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# Remote Global Fabrication: The Design and construction of a Full-Scale Installation



# **Telling Secrets**



# **Picnic Here!**



# **Private Moment**





**Field** 



















# Scholarship of Teaching and Learning | Open Track | Presentation

# Community-Engaged Learning and Co-Designing: Working with Local Artists for a Library Cafe

So-Yeon Yoon, Cornell University

# ABSTRACT

A popular cafe in a university library, known for locally grown ingredients and fair trade coffee, recently went out of business among many other restaurants and cafes during the COVID-19 pandemic. After the closing announcement, the story was posted on local news and social media (Figure the cafe space before and after the COVID). The university dining management team approached an interior design studio instructor and asked for help to redesign the cafe with a strong rebranding strategy. This case study presents a new approach to community-engaged learning and solving design challenges where students work with local artists and discusses pedagogical implications. There are increasing demands for universities to provide students with community-engaged, experiential learning opportunities and create a win-win-win situation for the university, students, and community (Bushouse, 2005). Students can acquire critical thinking and problem-solving competencies best through engagement with society (Bellanca and Brandt, 2010). Community-engaged, service-learning components have often been incorporated in interior design courses, serving community partners who are the clients with real-world projects. Experiential learning via community-engaged design projects can be composed of three elements: knowledge, activity, and reflection (Sterling, 2007; NSEE, 1997). In our five-week design challenge, student groups gain knowledge from the client and the end-users, i.e., cafe customers, to define goals and develop design concepts. Problem-solving activities include site visits, design development, critiques, and presentations. Another critical element in communityengaged learning is reflection, which must be facilitated throughout the project - before, during, and after each activity. For this design challenge, we added a new layer of resources; local artists. Art in interior design provides designers with effective color palettes, rich textures,

anchor points, and therapeutic effects for occupants. Art (in all its forms) has been a long tradition and instrument in reflecting rich local culture surrounding the site and beyond. Strolling through, downtown one could easily see sculptures, murals, statues, and various other artworks from local artists (Figure 1) who can provide students with rich stories to develop creative and meaningful branding/design ideas to better reflect where the design is 'situated.' Moreover, adding local artists' works can connect the university with the local community. Throughout the five-week design process, students can effectively turn knowledge into situated knowledge and design actions into situated design actions. This new learning element can complement the entire experiential design learning process (Figure 2), working synergistically with input from local artists, adding new social and humanistic values to the community-engaged learning experience. In this case study project, students are asked to document the community-engaged learning and co-designing process and compose reflective essays about the way they perceive events and issues, their beliefs, feelings, and actions, as well as the insights they gain throughout the project. In the presentation, we will show an overview of the process, student experiences, and design/learning outcome assessments. Pedagogical considerations and implications will be discussed to encourage other educators to consider similar approaches.

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Figure 1. Community-Engaged Learning Process



Figure 2. The Cafe Space



Figure 3. Street art, Ithaca, NY

# Use of Light and Material Demonstrations to Enhance Lighting Design Learning Among Interior Design Students

Elif Tural, Virginia Tech

# ABSTRACT

Lighting is an integral component of design. In addition to the research evidence on the visual effects of lighting on task performance, perception, and safety, the nonvisual effects of lighting with respect to circadian rhythms and sleep patterns are also increasingly discussed with respect to the healthy building standards, such as in the WELL Standard (IWBI, 2020). Such issues require designers to have a holistic understanding of light and color. Several lighting educators have underscored the difficulties of teaching lighting which is quantitative/technical in nature, but requires addressing the qualitative/perceptual aspects of lighting design (Gustina, 2011; Theodorson, 2006; Brown, 2004). The current lighting simulation tools and 3D modeling software allow designers to represent the visual environment and conduct quantitative analyses. However, reliance on such software and visualizations can be misleading as they do not allow students to experience visual qualities of light, such as color rendering qualities of various sources. Digital modeling tools allow for adjustments in color temperatures of light sources (warm versus cool), but are limited in informing designers about the qualitative aspects of lighting sources, such as how accurately they render materials and skin tones in space, and how user perceptions of space and interior finishes vary in relation to spectral power distributions (SPD) of light sources. Design students will develop such an understanding only by seeing and experiencing the effects of different light sources and their interactions with interior materials. As mentioned by Gustina (2011), access to and use of lighting equipment is critical to students' observation and understanding of fundamental lighting constructs. The primary goal of this study was to examine whether students' understanding of fundamental lighting design concepts improve through hands-on learning opportunities where they get to experience how lighting

quality and perceptions of interior materials interactively change for different light sources. The main tool used in this study was a Pantone light booth. The supplemental tools and materials included a spectrometer, a color checker that accurately represents color of natural objects and human skin, and color filters to adjust the spectral distributions and transmittance of light in a controlled manner. The material samples from the resource library were also utilized to test color perceptions of finishes with different chromaticity, texture and surface reflectivity properties under different light sources. The study assessed the impact of these learning tools on students' conceptual understanding and learning preferences in the lighting design course taught in Spring 2021 The effectiveness of the proposed approach was tested using two strategies: The students took a quiz after the concepts were introduced using a traditional lecture/reading assignment method. They took a post-quiz after they engaged in the hands-on learning activities. The Wilcoxon signed-rank tests were performed to detect differences in scores. An online survey was conducted on student experiences and preferences regarding the use of the light booth and supplemental tools, and their effectiveness (n=30). Descriptive statistics and content analysis were used to analyze the survey data. The comparison of pre-post test scores indicated an improved understanding of lighting concepts following the hands-on learning exercises. The students underscored the benefits of the light booth demonstrations for better understanding of concepts related color and light. The student recommendations included integrating the use of the light booth to design studios and materials classes, making it available to students to aid studio project material specifications, and incorporating such hands-on activities and demonstrations throughout the semester to review and further the understanding and application of lighting knowledge.

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Appendix A: Images from hands-on activities



Figure 1. Demonstration of light and color concepts through the light booth and a spectrometer connected to a laptop.



Figure 2. Demonstration of the metamerism concept using various interior finishes.

Appendix B: Sample word cloud generated from student responses to the survey question:

demonstration nearby result understand showing designing bett experimentation interact everyday semester principle ideo anding Pr explain wasn't visualize can't filter future view hand type spec C lights alongside emotion setting change it d design property lah problem appear ure temperature works image COLO hard last people SDa F box feel C 61 palette project exposure ſ WO things object aspect gr world option give wait of the subtract experiment son virginia d specific question concept emphasize play spectrum

"What did you like most about the light booth activities and lighting demonstrations?"

Scholarship of Teaching and Learning | Pedagogy | Presentation

# **Blurred Lines: Social Media in the Design Studio**

Jennifer Webb, University of Arkansas Sloan Aulgur, Massachusetts Institute of Technology

# ABSTRACT

The topic of social media has expanded dramatically in popular discourse since the early 2000s, but the study of its overlap with design education is only beginning. Relevant digital platforms, such as Instagram and Pinterest, are increasingly integrated into the lives of many young adults, especially students. The large percentage of young adults actively using social media suggests that an equally large portion of design students are consuming social media content and sharing their work in these environments. McLuhan (1964) posited that the more immersive a media is, the greater its impact. Social media, by this standard, is more immersive through image, text, and sound combined with direct user responses (e.g., like, share). Ignant (2016) states that convenience contributes to social media's growing role as a valid news format, and Dede (2016) expounds that an increasing number of people are using these platforms for informal learning. This new environment raises far-reaching questions such as: Can nascent designers be swayed or misled within social media environments? Can social media be a valid source of knowledge and evaluation for these students? This project examined the effects of two essential characteristics of social media on design education: design influence (using social media for inspiration and solution to studio design work) and immediate affirmation (positive confirmation where more "likes" suggest stronger designs). The sample (N=223 students, N=40 faculty) included current students enrolled in interior design, architecture, and landscape architecture design studios and faculty who teach the design studios respectively. The study implemented a mixed-methods approach including online surveys and focus groups. The data were collected in April, 2020, during the initial stages of the COVID-19 pandemic, and students and faculty were absent from campus. Survey analysis did not reveal significant differences between gender, year of study, or discipline regarding platform (Instagram and Pinterest were preferred), use, frequency, or types of posts in student responses. Faculty were also cohesive in platform, use, and types of posts.

Both student and faculty participants used social media primarily for design influence. While students identified influence and inspiration as significant uses, faculty expressed concern with legitimacy of content and replication of ideas. Scolere (2021, pg. 1207) identified the "tension between inspiration and imitation" in a study of professional graphic designers, suggesting that students may be at risk of crossing an ethical boundary that is blurry at best. Social media platforms were not sought as design feedback venues. Focus group themes were similar between students and faculty. There was a shared perception that discussing social media with the "other" group was taboo. Students felt professors did not acknowledge the use of social media, and professors showed uncertainty in the relevance of discussing it openly with students. Students and faculty differed in their ideas about using social media as a place to dialogue about the student's work. Students indicated an openness that was not reciprocated by the faculty. Findings suggest that a robust dialogue between faculty and students about the role of social media would benefit the design education environment.

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#### Blurred Lines

#### Discipline

Table 21. Platforms used for design inspiration + Student Discipline + Faculty



Table 22. Platforms used for design expression + Student Discipline + Faculty



Table 23. Platforms used for design feedback + Student Discipline + Faculty

|           | (                            |       |                     |      |       |          |    |
|-----------|------------------------------|-------|---------------------|------|-------|----------|----|
| Twitter   | n=6                          |       |                     |      |       |          |    |
| snapChat  | n=I<br>n=8 n=6 19            |       |                     |      |       |          |    |
| Linkedin  | n=3<br>n=6                   |       |                     |      |       |          |    |
| Pinterost | n=t:n=1<br>2                 |       |                     |      |       |          |    |
| islagram  | n=23 <mark>-0</mark>         | =4 Te | n=6 <mark>58</mark> |      |       |          |    |
| acebook   | n=11 <mark>n=2 n=8</mark> 21 |       |                     |      |       |          |    |
| None      | -                            | n:    | =72 n=18            |      | -n=33 | n=19 142 |    |
|           | 1                            |       |                     |      |       |          | /  |
|           | 0 ARC                        | H     | LARCH               | IDES | E     | ACULTY   | 24 |

#### Blurred Lines

#### Age.

Table 24. Platforms used for design inspiration + Age



Table 25. Platforms used for design expression + Age



Table 26. Platforms used for design feedback + Age



Scholarship of Teaching and Learning | Pedagogy | Presentation

# Revising the Design Process: Mindful and Contemplative Approaches

Kurt Espersen-Peters, University of Manitoba

# ABSTRACT

This presentation explores how mindful and contemplative thinking strategies can inform and structure the interior design creative process. The idea for the course came after an examination of the cross-discipline application of critical and mindful thinking in the fields of economics, social justice, education, and contemplative studies. In these instances, mindfulness structured a meaningful dialectic between self and society, generating positive action and empathetic solutions. This led the author to consider applying a similar strategy to interior design thinking and practice. When surveying the implementation of mindfulness in interior design pedagogy and practice, we see it is predominantly focused on individual self-care techniques—examining approaches to student/designer stress and anxiety-or creating spaces in which self-care can be practiced or administered. However, external applications of mindful thinking and engagement were missing. At this point, the author turned to the active mindful strategies found in other disciplines, such as education and pedagogy, politics, economics, indigenous rights, and social justice. Here, mindfulness has become a philosophy and methodology that transcends the private self-care needs of the individual to proactively engage larger communities and collectives. It is from this position where the potential of applying mindful approaches to interior design thinking and practice emerged. As a discipline that is centred on problem-solving, interior design thinking and practice could benefit from mindful approaches by moving beyond anxiety management to develop critical design strategies and enhance design practice. To begin, the mindful application was envisioned for the initial research, ideation, and development phases of the design process, where the connections between self-reflection and expression were strongest. This hypothesis formed the basis of an interior design studio that examined how to integrate mindful and contemplative learning strategies into design thinking and practice by acknowledging the

positive aspects of individual self-care while employing mindful, contemplative, and critical approaches in the understanding and resolution of interior design challenges. Overall, the course brought together aspects of traditional and contemporary Buddhist/mindful thought and ecumenical contemplative studies, focussing on process over product. Through a series of reflective assignments and lectures given by mindful and contemplative thinkers, students applied aspects of mindfulness to the design process at various stages, such as the research and collection phase, the analytic and ideation phase, and the implementation and communication phase. Students followed the mindful tenets of practice, attentiveness, and the non-judging moment, concepts derived from traditional and contemporary mindful thinking. The first two assignments had the students focus on an internal critical body/mind awareness to establish and recognize an informed positionality. Once situated, the students progressed to an external embodied spatial exploration that ended in a reflective and empathetic autoethnographic understanding of a given interior space and its users. The results of the studio revealed an increased awareness of the student's potential to understand, contextualize, and act in response to a series of design challenges. Mindful and contemplative approaches allowed students to establish what Komjathy calls a "critical first-person discourse," allowing students to confront existing biases, prejudices, and opinions-not only in themselves but in the social constructs around them-and move towards a more holistic understanding of the design issues and their solutions. Under the guidance of mindful thinking and action, the students achieved a new awareness of how interior design can make meaningful contributions to the world outside of themselves.

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**Rethinking the Design Process: Contemplative and Mindful Approaches. Vertical Interior Design Studio** 

# **Assignment 2: Hand**

# Rationale

An individual experience is always of something; it does not exist independent of a position or a context. In the built environment, we have an embodied response to the spaces and objects around us. How can we begin to recognize and possibly understand these experiences? Mindfulness is a way to come to terms with these possibilities.

# Objective

Students will select an object that fits into one hand. Students will then conduct a subjective exploration of the object's relationship to their embodied position and context (the experience).

The exploration will consist of applying the three tenets of mindfulness: *practice*, *attention*, and *the non-judging moment*. The focus is on expressing the experience of the object itself, not an interpretation or analysis.

This exploration will form the basis for a subjective narrative communicated through an appropriate medium or media chosen by the student. This narrative will document and express the exploration process.

# **Evaluation**

Assignment 2 will be evaluated on the critical reflection and understanding evident in the creativity and inventiveness of the presentation and formatting of the visual narrative. Please refer to the Assignment 2 Rubric Descriptors document for further information.

# Deliverables

Students will prepare a visual narrative of their experience of the object and the hand. The Deliverables for Assignment 2 will be determined by the student as deemed appropriate to the student's narrative but should include evidence of practice, attention, and an awareness of the initial experience/moment. Examples of Student's Explorations: Object Meditation (Why I Hate Apples)



Rethinking the Design Process: Contemplative and Mindful Approaches. Vertical Interior Design Studio

# **Assignment 4: Community**

# Rationale

We could argue that our built environments are reflections of ourselves. As designers, we have a direct hand in shaping these expressions, which are, in turn, based upon our understanding of the world around us. To know ourselves is to know others, but how much of the world outside ourselves can we really know?

By applying the mindful approach of silence, attentiveness, and the non-judging moment to our observations, we can add our own critical subjective experience to the evaluation of the world around us. In these instances, the empathetic engagement between our own interiority and the relative alterity of others can shape a broader context in which the built environment can be conceived.

## **Objective**

For this assignment, students will select an interior space of their choosing and experience and analyze it from an autoethnographic perspective. Building on the previous three assignments, students will establish their critical subjective position relative to the chosen context by examining the dialogue between the space and its users.

From this position, the students will develop an informed analysis/expression of the space that engages with at least one (1) of the following conditions: explanation, comparison, or critique. This analysis can assume any form or use any media to appropriately express the student's understanding of the space and its users.

# **Evaluation**

Assignment 4 will be evaluated on the critical reflection and understanding evident in the creativity and inventiveness of the presentation and formatting of the spatial socio-cultural analysis. Please refer to the Assignment 4 Rubric Descriptors document for further information.

## **Deliverables**

Students will prepare an analysis/expression of their understanding of the chosen interior space. The Deliverables for Assignment 4 will be determined by the student as deemed appropriate to the student's intervention but should include evidence of critical/systematic reflection and action.


Examples of Student's Explorations: The Caravanserai (Travellers Old and New)

Examples of Student's Final Work: The Caravanserai (Travellers Old and New)



### Scholarship of Teaching and Learning | Pedagogy | Presentation

### **Design Build Hybrid Model**

Maria Delgado, Colorado State University

### ABSTRACT

Problem/Background The COVID-19 pandemic forced schools to adapt their teaching modes of delivery. The immediate school restructuring gave rise to online classroom configurations. However, for some high-impact classes (HIPs)-active learning practices that promote student engagement as measured by the Center for Postsecondary Research's National Survey of Student Engagement (2021)—certain project components could not be fully reconfigured online (e.g., design build courses). Kuh (2008) asserted that HIPs have a positive influence on student success. Therefore, due to COVID-19, the reduction of these courses may be disruptive to student learning. To that end, teachers were challenged to identify the balance between online and socially distanced in-person teaching. Objective The tiny house course project strove to address this issue by providing a hybrid course delivery model. In the capstone course, a group of students designed and built a tiny house over a semester-long period. Methods The timeline for the course was 1 month to design and 3 months to build. The process blended opportunities for remote and in-person experiences. The class designed the home remotely via Zoom for the first 4 weeks. The students interacted via Jamboard, a digital whiteboard on which they could collectively contribute to design concept ideas. To determine design decisions, the teacher hosted Zoom polls where students anonymously voted on a design direction. The Zoom polls fostered discussion sessions for students to hear and provide diverse perspectives and reasoning for the design decisions. In addition to using Jamboard and Zoom polls, the class presented their house design to external reviewers (Figure 1). The students presented their tiny house drawings during Zoom video calls and their real-time visualizations with Enscape (2021)—a computer rendering program-to collect meaningful feedback from reviewers and ensure the house design complied with National Organization of Alternative Housing (NOAH, 2021) regulations. The construction of the home occurred completely in-person. However, the in-person experience was adapted to integrate social distancing regulations, and teachers ensured appropriate COVID-19 prevention

measures were followed. Students wore masks at all times. Additionally, students engaged in self-monitoring to maintain a 3-foot distance when possible. Moreover, to minimize group size, the class was assigned to two groups, Group A and Group B, to help minimize classroom spreading of the virus if a COVID-19 outbreak occurred. Last, the remote inspections took place using a combination of social distancing and remote measures. The class used the NOAH Remote Digitized Inspection process. An online app was installed on the teacher's phone to remotely conduct inspections. The students walked through the tiny house with the mobile phone, allowing the inspector to remotely view each identified requirement. The hybrid inspection model allowed students to learn about the inspection process on-site. Conclusion The completed class project was a NOAH-certified tiny house. The main level included kitchen, dining, and bathroom spaces. The upper level of the tiny house included the bedroom. The home was documented with a 3D Matterport camera. The home will be sold by the university, and all proceeds of the sale will fund a future tiny house project. The tiny house design build hybrid model allows future students to have the opportunity to learn about design and construction in an educational setting. Significance of Presentation Overall, the class project significantly contributed to architecture education. The hybrid design build teaching model demonstrated the ability to effectively manage design build courses incorporating distance learning. The class project also highlighted the potential to establish a financially sustainable design build education model to allow multiple students to be exposed to HIPs over a longer period.

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## Design Build Hybrid Model

### Remote Design via Zoom

01. Jamboard -Students used a collaborative digital whiteboard to design online 02. Zoom polls - Students took Zoom polls to determine design decisions. 03. Zoom meetings - Students presented their Revit Model via Enscape to professionals online to collect feedback.

### Physical Build

04. Students installing exterior wall sheathing. 05. Students installing interior vinyl plank flooring. 06. Interior final image of tiny house. 07. Exterior final image of tiny house.

















#### **Remote Inspections**

**o8**. Students using the Remote Inspection app for the trailer inspection. The class project successfully passed all five NOAH inspections to receive the NOAH certification.



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### Implementing Research-Informed Design in a Senior Thesis Studio

Eun Young Kim, University of Tennessee Chattanooga Jessica Etheredge, University of Tennessee Chattanooga

### ABSTRACT

ISSUE: The design industry has recently recognized the benefits of research-informed design practice (Huber, 2021). The research-informed design process integrates empirical data and literature review in a collaborative design process (Peavey & Wyst, 2017) to achieve innovative solutions to complex problems. Empirical data can include project-relevant information and literature review from professional journals and magazines. Additionally, design professionals have noted the value in feedback from previous projects, insights from consultants, and advice from colleagues in informing their design solutions (Criado-Perez, et. Al, 2020). Reflecting the industry's acceptance of research-informed practice, the Council of Interior Design Accreditation (CIDA) 2020 Professional Standard 8, Design Process, ensures interior design graduates can appropriately frame design questions by employing methods of inquiry, data collection, and analysis. To educate students who can meet the needs of the industry, a growing number of Interior Design programs are introducing and implementing research-informed design to their studio courses (Mckillip, & Cutler, 2020). METHODS: This presentation introduces how a senior thesis studio from a CIDA accredited interior design program successfully employed research-informed design in a two-semester-long, adaptive reuse project. A structured mentorship between students and professionals was implemented to inform design with professional knowledge. The results of each inquiry were shared and discussed in small groups and online among students. Students completed pre-design research and a schematic design in the first semester; design development and construction documents were completed in the second semester. The focus of the presentation lies on the methods of inquiry, knowledge building, integration of information and design, and collaborative activities in the design process: 1. Historical research: In teams of three or four, students conducted historical research of the

project building and the site. As a deliverable, students created a report demonstrating their understanding of the architectural history and significance of the building along with recommendations for a future action plan. 2. Project-specific empirical data collection: In teams of three or four, students employed the method of inquiry through forms such as interviews and surveys to collect project-, client-, and user-specific information. The analysis and synthesis of the empirical data supported students in identifying design problems and goals. 3. Projectrelevant knowledge building: In teams of three or four, students conducted case studies and literature reviews on various design topics such adaptive reuse, sustainability, technology, experience, wellbeing, lighting, acoustics, wayfinding, and code analysis as they related to the project building and site. Experts on related topics also provided guest lectures. This knowledge served as an idea bank, providing students with up-to-date research findings and product information. 4. Integration of professional insight and design implementation: A structured oneto-one mentorship of students by allied professionals was employed throughout the studio. Students met with their mentors biweekly and reviewed their design implementation of research findings. CONCLUSIONS: The student learning outcomes were reviewed based on student work (Appendix). Student work demonstrated that the knowledge obtained from research and from collaboration with mentors provided useful information in finding creative solutions. Notable feedback from professional mentors was that students were more confident in their design proposals at the final critique review, which were more informed and creative than in previous years. This presentation will generate further discussions on the instructional methods of design research and the impact of mentorship from professionals in the process of knowledge integration.

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### Appendix 1. Historical Research: Historic Structure Report



### Appendix 2. Empirical Data Collection: Survey



### Appendix 3. Project-relevant Knowledge Building: Literature Review



### Appendix 4. Integration of Information: Plan Analysis



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### Appendix 5. Informed-Design Proposal: Project Presentation



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### Investing in the Individual: A Strengths-Based Approach for Meaningful Graduate Development

Marlo Ransdell, Florida State University Hannah Smith, Florida State University Rachel Bannister, Florida State University

### ABSTRACT

One of the primary reasons students attend graduate school is to become more competitive in the job market through further specialization within the field (Walliss & Greig, 2009). Interior design graduate education has many paths and degree tracks, and these can be as individual as the program offerings and students themselves (McCoy, 2012). Of the top 10 graduate programs in the Design Intelligence ranking for 2020, over 12 different degree tracks and foci are available for prospective students. The opportunities for diverse graduate education in interior design and the allowances for individualized research agendas within programs may create a sea of opportunity but could also result in a lack of focus when students are beginning. New graduate students may find it daunting to transition straight from the undergraduate experience and be expected to develop a personalized research agenda or enter from practice where "being a student" may be a concept to relearn. This methodology outlines three strategies for beginning graduate student discussions on thesis topics in a positive, organized, and adaptable way. They include 1) StrengthsFinder, 2) Topical Graph, and 3) Interactive Problem Identification. Learning this process is just as important as developing a meaningful and robust research agenda. The purpose of this format is that as graduate student topics change or shift, a solid foundation of problem statement development is understood. Developed by Don Clifton in 1998, the StrengthsFinder is a questionnaire that uncovers 5 of the top strengths people possess for success (Rath, 2007). This has been used by 26+ million people worldwide and is a reliable tool for professional business growth (Gallup, 2021). The use for graduate students has shown to be beneficial in helping students leverage their positive attributes within the education environment (Gallup, 2021). Students visually communicate their strengths (see appendix 1) and contextualize

these within their lives and past experiences in discussions. This graphic begins the conversation to move to the Topical Graph that uncovers personally driven interests. It asks students to put all thoughts and ideas out of their brain and visually place them on a page to uncover connections (see appendix 2). While this is an everyday brainstorming activity, the connection to the StrengthsFinder visual is the critical focus. This conceptualizes topics within inherent strengths. The Topical Graph sheet goes through many iterations and sees new topics come in and out, with focus changing and shifting along the way while always trying to align interest with strength. We know that graduate programs can last over years, and personally driven topics sustain student interest, passion, and empathy over this extended period. Developing topical ideas leads to determining the problem that design can solve, and problem identification for a thesis is one of the fundamental pieces of the thesis puzzle. This process utilizes an interactive form to fill in the essential aspects of the problem statement that can be reviewed and changed to develop specific meaning (see appendix 3). This exercise teases the variables out and asks students to narrow their topics through a linear process. This presentation outlines how graduate students can thrive from day one through positive development. Faculty and graduate students involved in the above execution will discuss the impact of understanding strengths in topic development and how they evolve into actualized and successful research projects. The presentation's focus will be on the impact and importance of understanding and utilizing the inherent strengths students possess and how to assist each in embedding their given strengths into developing meaningful and appropriate research topics for further professional growth.

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### Appendix 1 – StrengthsFinder Examples



align with my there research topics

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### Appendix 2 – Topical Graph Examples











PAUSPORTATION

## Appendix 3 – Problem Identification Worksheet (referenced and adapted from <u>Problem Statement Formula</u> (bridgepointeducation.com)



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### Material Evidence: Making the Case for Meaning in a Material World

Erin Hamilton, Texas Tech University Laura Cole, University of Missouri Lindsay McManamon, University of Missouri

### ABSTRACT

Design theory classes offer an opportunity for students to contextualize their work in a larger body of ideas. Design theory, however, can lean towards issues specific to design-for-design sake, discrete from the everyday. How, then, to best teach a course about the theory of materials to interior designers? Interior Design education can fragment the study of materials: physical characteristics of materials taught in construction classes, visual and haptic properties in color and materials classes. Design studio may synthesize that understanding and yet: it is common practice not to consider factors as basic as cost. This autonomy may be appropriate, but it leaves pedagogic gaps. One possible response to these issues is the subject of this proposal, a required materials theory class for juniors in a BFA program. Our goal: to reimagine the potential role of a theory class as a space for synthesizing (rather than analyzing or commenting on) material content from other courses. Each week the faculty chose one material around which we organized class content. These ranged from the ubiquitous (GWB, plastic) to the sublime (marble, gold). Lectures and readings consider each material through the prisms of technology, political and social structures, economics, history and the environment. One example: in considering oak, the class investigates the history of technology, of cutting thick to thin. Oak is not simply the subject of the lecture, it is the catalyst for societal change in which both the material and the perception of its value changes with advances in technology. Weekly assignments are multi-faceted, homologous to the issues at hand. A weekly reading-response post on a communal MIRO board (title: TAPESTRY) enables students to contribute to one another's work, a collective weaving of ideas and images in pursuit of a deeper understanding. A case-study project requires students to research and present the specific physical and social

conditions of a material's application in a particular project- asked to consider micro and macro contexts, construction and fabrication methods (including labor conditions, implications of waste and wear) and to interpret the material vis-à-vis its users and the larger culture. A drawing project requires a student to propose an analysis of a material assembly in the form of an analytique, identifying a polemic between the project's material ambition and its observed material effects. Other factors: a team of faculty with diverse expertise- from active design practitioners to community design activists to academics pursuing the most abstract and theoretical aspects of the discipline. The multi-modal model has contributed to student work in both the junior year design studio and the thesis project. Since the launch of this class in 2015, materials and materiality are consistently positioned as more central to design process. Students are more aware of the costs, implications, and impact of their material choices on their occupants, their communities, and on the interior design discipline. They are significantly less likely to rely on the good-taste model of materials selection (uniformly new, costly and neutral in color). The architectural historian Kenneth Frampton, in Studies in Tectonic Culture, argues that no material has a stable universal meaning, that it must be understood in context. This class enables students to position materials in multiple contexts, and enables them to identify, distill and visually communicate their collected evidence. Their work demonstrates how heterogeneous frames can alter those contexts and affect understanding and assessment of materials in our environments. A design theory classes can (and should) embrace material inquiry as a hallmark of responsible pedagogy and equitable practice, through collaborative research embracing placebased, political, and environmental narratives.

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## GOOD

good, adj., n., adv., and int.

Pronunciation: Brit. /gʊd/ , U.S. /gʊd/

Forms: OE go (transmission error), OE gode- (in derivatives, rare), OE got... (Show More)

Etymology: Cognate with Old Frisian god (West Frisian goed ), Old Saxon god ... (Show More)

A. adj. Good is the most general and most frequently used adjective of commendation in English, and one of the most common non-possessive adjectives in all periods from Old English to the present day. Almost all uses convey the sense of being of a high (or at least satisfactory) quality, useful for some purpose (specified, implied, or generally understood), and worthy of approval. Distinctions of sense typically arise in either of two ways. (i) Because different weight is accorded to the above-mentioned general senses in particular contexts. This is exemplified by the senses describing a person's character or behaviour, where senses A. 14a, A. 15a, and A. 16a have a stronger element of high inherent quality, in contrast with the vaguer element of approval in sense A. 4; similarly, the element of approval is stronger in sense A. 16a than in the other senses in branch A. II. (ii) Because a very specific context makes the nature of the quality, purpose, or approval in question implicit in the use. This is exemplified by the specific applications of the very general sense A. 1 that are laid out in sense A. 2.

The general nature of these semantic parameters also contributes to the fact that the use of good is characterized to an unusually high degree by recurring syntactic patterns, common patterns of collocation, and established locutions. For example, predicative use, especially in the construction good for, characterizes the senses in branch A. IV. (the exception, sense A. 25, could arguably be placed in sense A. 2 in branch A. I.); while quots. 1936 at sense A. 14b and 1769 at sense A. 15b are probably more likely felt by users as uses of an established collocation good intentions in two different contexts than as two distinct senses of good applied separately to the noun intentions.

In Old English (as in Old Saxon and Old High German) the opposite of 'good' was regularly expressed by evil adj., but in Middle English this was supplemented by ill adj. and bad adj. The last is now the standard comparative term, the others being archaic or dated except for use of evil in contrast with sense A. 14.

I. As a general adjective of commendation, implying that the thing described is of high or satisfactory quality, suitable for some purpose, or worthy of approval.

1. Having in a large or adequate degree the qualities or properties desirable in something of the specified kind; of high or acceptable quality, standard, or level.

a. Of a thing (material or immaterial).

b. Of a substance.

(a) Of food or drink, or something used for this. Freq. overlapping with, or difficult to distinguish from, a number of more specific senses: see senses A. 2f, A. 2d, and A. 21a(a).

(b) gen.

c. Of something abstract, esp. an action or activity.

2. spec.

Categories »

a. Of land, soil, etc.: fertile. Also in figurative, esp. spiritual, contexts.

b. Of advice, judgement, etc.: based on sound reasoning or wise insighted hep clikely to be click the valuable is practice. Some annula esprin early use, may have a stronger sense of validity (cf. branch A. III.) or of being likely to contribute to one's well-being (cf. branch A. IV.).



e. Of language: that is written or spoken to a proficient or high standard (esp. by a non-native speaker); correct or accurate with regard to grammar, pronunciation, etc.

f. Of food, medicine, etc.: fit for consumption or use; spec. not stale, contaminated, or rotten. Freq. in to keep good : to keep fresh.Examples from earlier texts relating to the preparation of food or medicines (e.g. quots. eOE2 at sense A. 1b(a), c1450 at sense A. 1b(a)) may possibly be this sense.

g. Of a question or observation: requiring careful consideration before an answer or response is given; particularly pertinent or challenging. Chiefly in good question.

Categories »

h. orig. Sc. Of clothes: smart and suitable formal wear. Also of a room, furnishing, or household article: of superior quality and hence reserved for special occasions. Cf. best adj. 1b. i. Of theatre, radio, television, etc.: successfully engaging the audience by making effective use of the distinctive characteristics and features of the specified medium.

3.

a. Of a person: having the qualities, characteristics, or skills needed to perform the specified role or pursue a specified occupation appropriately or to a high standard.

b. Skilled or thoroughly competent in a particular activity.

(a) attrib., typically with agent nouns.

(b) In predicative use. Chiefly with at or (less commonly) in (also occas. +for, +of, +to).

(c) In predicative use with with: skilled or highly competent at using, handling, or dealing with the specified thing. Originally in to be good with one's hands (see hand n. Phrases 3i).

c. Of a friend, ally, etc.: trusted, loyal, true; (more generally, of a friend) close, intimate. to be good friends : to have a mutual bond of close and loyal friendship.

Categories »

d. Strictly adhering to or loyally fulfilling all the principles of a particular religion, political party or ideology, or other cause.

4. Of a person: distinguished by admirable or commendable qualities; worthy, estimable, fine.

Categories »

a. As a term of general commendation or approval. In early use usually implying distinguished rank or valour; in later use typically suggestive of honest reliability or decency, or personal worth regardless of rank or status. Now chiefly in good men and true (now somewhat arch.), and comparative expressions, as as good as, too good for, etc. See also good man at sense A. 4e. In modern English, good typically has some aspect of moral judgement when applied to people (cf. branch A. II.), creating some overlap between this sense and weakened examples of the moral use; cf., e.g., quot. 1808 and quot. 1960 at sense A. 15a. Categories »

b. As a conventional epithet prefixed to a title, used in addressing or referring to a person of high rank or social status, sometimes specifically a patron or patroness (cf. goodlord n., goodlordship n.). Now hist. or arch.Formerly also in stylized forms of address in which good precedes the possessive adjective, as good my lord, good your ladyship, etc.

Categories »

c. Used in addressing or referring to someone in a courteous or respectful manner. Now often humorous or somewhat depreciative. See also good lady n. at Special uses 3, goodman n., goodwife n. your good self ...

### **GOOD DESIGN**



Installation view of the exhibition *Good Design*, The Museum of Modern Art (1951-1952) Photographic Archive, The Museum of Modern Art Archives, New York. Photo: Soichi Sunami



Window display, Carson Pirie Scott department store, from Eames Design, John Neuhart, Marilyn Neuhart, Ray Eames





Fragment (rug), wool, attributed to Turkey, 14th c/ metmuseum.org



Men's clubhouse, Maipua, New Guinea, from Architecture without Architects, 1965

Goreme cones, Cappadocia, Turkey from *Architecture without Architects*, 1965



Circular Basket with Lid, Grass & palm leaf, Egypt, 15<sup>th</sup> c BCE/ metmuseum.org



African canopies, from Architecture without Architects, 1965



Theraen houses, Corsica, France, from Architecture without Architects, 1965



54 Tiles from the chapel of Château de la Bastie d'Urfé, France, Faience (tin-glazed earthenware), 16<sup>th</sup> c/ *metmuseum.org* 

...you think of Brick, for instance, and you say to Brick, "What do you want Brick?" And Brick says to you "I like an Arch." And if you say to Brick "Look, arches are expensive, and I can use a concrete lintel over you. What do you think of that?" "Brick?" Brick says: "... I like an Arch""

-Louis Kahn



Case (Inrō), Japan, Basket weave over lacquered wood & tortoiseshell, 19th c / metmuseum.org



Japanese indigenous architecture, from Architecture without Architects, 1965

House (royal quarter), Bakuba, Congo, from Architecture without Architects, 1965





Top left: Buscheto. Duomo di Pisa. Begun 1063. www.bluffton.edu/homepages/facstaff/sullivanm/italy/pisa/duomoint/ cathedralint.html

Top right: Adolf Loos. House for Josephine Baker (unbuilt). 1927. www.architectural-review.com/essays/loos-and-baker-a-house-forjosephine/10028604.article

Right: Oeuffice (Nicolas Bellavance-Lecompte and Jakub Zak). Ziggurat. 2012. Materials: acrylic and solid stained wood worleygig.com/tag/ettore-sottsass/





https://www.redbubble.com/shop/marble+masks





Carlo Scarpa. Fondazione Querini Stampalia, Venice. 1961-1963. Panel & floor / door www.tectonica-online.com



Las Vegas Hilton High Roller Suite, 1990's / Tadao Ando, Rowhouse , Sumiyoshi, Japan, 1976



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Mies van der Rohe & Phillip Johnson, Seagrams Building, New York City, 1959. www.archdaily.com




Seagram Building, New York, 1958

Mies van der Rohe & Phillip Johnson, Seagrams Building, New York City, 1959. Left: archdaily.com/ right: socks-studio.com/2014/10/07/corner-solutions-of-mies-van-der-rohes-towers-john-winter-1972/





Mies van der Rohe & Phillip Johnson, Seagrams Building, New York City, 1959. left: www.archdaily.com/ right: www.architects.org/architectureboston/articles/curtains





Mies van der Rohe & Phillip Johnson, Seagrams Building, New York City, 1959. top: www.archdaily.com / bottom: nyc-architecture.com/UES/UES002.htm



Marble Quarry. Apuanian Alps between the provinces of Massa Carrara and Lucca in Tuscany. All: https://oem.bmj.com/content/62/6/417



Mies Van Der Rohe, Barcelona Pavilion, 1929 www.thearchitectpainter.com/MadisonGray/deep\_SIGHT/reviews/barcelona.htm



Mies Van Der Rohe, Barcelona Pavilion, 1929



Jeff Wall, Morning Cleaning, Mies van der Rohe Foundation, Barcelona, 1999



Mies Van der Rohe, Collage: Barcelona Pavilion, 1928





SANAA. Installation at Barcelona Pavilion. Photograph by Ramón Prat, courtesy via Fundación Mies van der Rohe. 2008. top: www.dezeen.com/2008/11/25/mies-van-der-rohe-pavilion-installation-by-sanaa/ bottom: www.metalocus.es/en/news/sanaa-installation-barcelona-pavilion



SANAA. Installation at Barcelona Pavilion. Photograph by Ramón Prat, courtesy via Fundación Mies van der Rohe. 2008. www.metalocus.es/en/news/sanaa-installation-barcelona-pavilion



SANAA. Installation at Barcelona Pavilion. Photograph by Ramón Prat, courtesy via Fundación Mies van der Rohe. 2008. www.metalocus.es/en/news/sanaa-installation-barcelona-pavilion



Acrylic & Plastic-Sheeting Barriers Left: https://www.screenflex.com/photos/plexiglass-reception-barriers Right: https://www.accesswire.com/598624/ZipWall-Barriers-Help-Businesses-Reopen-during-the-COVID-19-Pandemic



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Anna & Eugeni Bach. *mies missing materiality*. 2017. photos by Adrià Goula. www.archdaily.com/883470/mies-van-der-rohes-barcelona-pavilion-dematerialized-with-all-white-surfaces



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Anna & Eugeni Bach. *mies missing materiality*. 2017. photos by Adrià Goula. *divisare.com/projects/371072-anna-eugeni-bach-adria-goula-mies-missing-materiality* 

# fin

|             | *HIT RECORD*<br>MMM:  |
|-------------|---|
|             | theory class: primary function> contextualize own work> body of contemporary ideas                    |
|             | theory> constructs a series of relations between objects/space, people & ideas                        |
|             | this class: uses materials as a frame to better understand these relationships, and these             |
|             | relationships to deepen our understandings of materials   |
|             | look at materials holistically because that's how designers assess materials, in school & in practice |
| GOOD        | Because this IS a theory class, we'll ask theory questions along the way.                             |
|             | Big meta-question of ALL theory classes:  |
|             | how do we recognize the good?   |
|             | ultimately all must construct our own measure   |
|             | to pursue q. one must be aware of existing measures (ensure an answer that has relevance beyond       |
|             | our own serves, own preconceptions and opinions)  |
| GOOD (OED)  | important ordering mechanism- how we make sense of complex phenomena (text-based)                     |
|             | Good> definition: 30 pages  |
|             | references vast categories of value   |
|             | beauty, economy, etnics, useruiness, suitability, logics, relevance                                   |
| GOOD DESIGN | problem of what is good design references many categories   |
|             | what good would you like to do as a designer?<br>AND/OR   |
|             | what kind of good would you like to be as a designer?   |
|             | how will you recognize it as being good   |
|             | this class/ an aspect: centered on issues surrounding materials and fabrication                       |
|             | this class can function as part of your search  |
|             | to clarify: not our jobs to define good design  |
|             | only to provide material to construct a critical method to pursue that q. & others                    |
|             | using a device to get around that problem> show other who will  |
|             |   |
| MoMA show   |   |
|             | The Museum of Modern Art> series of exhibitions heading GOOD DESIGN                                   |
|             | furniture +appliances + textiles + graphics   |
|             | Note: except for Pay Fames, that list is white men  |
|             | - Note. except for Kay Lames- that list is write men  |
|             | mission: to define & support Good Design (as defined & supported by MoMA)                             |
|             | - based on the modernist principles of functionalism, simplicity, and <b>truth to materials</b> .     |
|             | These principles: the gauge of whether or not something would be included in the show, whether it     |
|             | was indeed good design  |
|             | Truth to materials  |
|             | - Principle of modern architecture  |

|                             | <ul> <li>a phrase encountered in many 19th- and 20th-century writings on arts and design<sup>i</sup></li> <li>any material should be used where it is most appropriate</li> <li>the nature of the material should not be concealed</li> </ul> |
|-----------------------------|---|
|                             | -   |
| good design- CPS<br>image   | Program also sponsored exhibitions at Chicago Merchandise Mart & Carson Pirie Scott Department Store  |
|                             | Edgar Kaufmann, Jr. : curator & director of program   |
|                             | <ul> <li>historian &amp; philanthropist, client for FLW's fallingwater</li> </ul>   |
|                             | - his described basis (good design): "eye appeal, function, construction and price"   |
|                             | slightly different criteria, yes?   |
|                             | In this case the good in good design would include access to those goods, whether or not they were  |
|                             | affordable> materials & methods of their making inevitably would have a HUGE impact on those factors  |
|                             | one $\alpha$ (part of a larger process): who has the authority to determine the good <sup>ii</sup> ?  |
|                             | institution + its curator <sup>iii</sup> > to whom show is commonly attributed  |
|                             | ultimately thousands involved in the curation & design of show, countless designers, fabricators &  |
|                             | clients to produce work shown therein   |
|                             | also: its visitors <sup>iv</sup> > endow MOMA w/ that authority <sup>v</sup>  |
|                             |   |
| AwoA                        | history of constructed environments>  |
| goreme cones +              | <ul> <li>inseparable from understanding of available materials</li> </ul>   |
| bamboo frames <sup>vi</sup> | usual starting place: qualities that we might assess to select one material over another  |
|                             | - physical properties   |
|                             | - stiffness, strength, ductility, hardness, toughness, water resistance, durability   |
|                             | - Visual & haptic properties  |
|                             | color, texture, reflectivity  |
|                             | - mechanical properties   |
|                             | <ul> <li>density, electrical conductivity, thermal conductivity</li> </ul>  |
|                             | all intrinsic sensible qualities  |
| AwoA                        | Choices and qualities affected by   |
| Basket & canopies           | workforce (skills, available population) + technologies to shape that mat'l   |
|                             | also> the labor costs associated with particular material assemblies  |
|                             | <ul> <li>unskilled / semiskilled / highly skilled work</li> </ul>   |
|                             | <ul> <li>as different as material preponderance around the globe</li> </ul>   |
|                             | Larger scale: culture, climate, economies> all affect material choices for designers  |
| AwoA                        | Famous quote by louis kahn to students (what does the brick want to be)   |
| theraen house + kahn        | speaks to Material quality/strength>  |
| quote                       | <ul> <li>intrinsic quality of masonry is that it resists crushing (compressive forces) not so much w/<br/>bending (aka tension/ no long skinny brinks)</li> </ul>   |
|                             | - can be backed up with empirical evidence, independent of our own personal experiences   |
|                             | embedded w/in this story:   |
|                             | - pure economics rejected as a criterion (concrete lintel)  |

|   | <ul> <li>concrete (when reinforced w/ steel rods) has the requisite strength to support the load at the top of an opening</li> <li>the arch speaks to truth to materials in one way, but it's only one possible answer</li> </ul>  |
|---|--|
| AwoA<br>Woven & thatched<br>surfaces            | <ul> <li>What is the truth revealed in THESE examples?</li> <li>Systems by which space is enclosed: woven (textile)</li> <li>@ scale of architecture: Weather proof; rain-shedding/ moderating temperature</li> <li>Inherently sustainable: using local materials from a renewable source/ can be repaired easily when worn/ irregularity is a feature, not a bug</li> <li>ALSO:</li> <li>Makes a threshold: an essential separation between inside &amp; outside</li> <li>Foundation to social principles as well/ what is privacy w/o enclosure?</li> <li>Pattern-making: specific to particular regions</li> <li>Based on traditions passed down face-to-face, from person to person</li> <li>An expression of identity&gt; place or occupant</li> </ul>  |
| Pisa/ baker house/<br>ziggaraut                 | <ul> <li>Truth to materials&gt; historians explain this as modernism's reaction to arbitrary application of aesthetic styles to the built environment (the cliché: a characteristic of 19<sup>th</sup>c design) &amp; to embrace material's inherent (sensible) qualities independent of traditional styles</li> <li>Lovely idea&gt; simple (you should be suspicious)</li> <li>History of material in constructed environment&gt; more complicated than that.</li> <li>Both Duomo &amp; Loos&gt; stone a few inches thick, as a finish surface covering a structure composed of other stone or masonry/ horizontal pattern resembles the coursing of the hidden material underneath</li> <li>Should we call this misleading or fakery?</li> <li>Can we understand it to be a sustainable materials strategy, if the finish stone is a limited resource?</li> <li>Zigguraut&gt; makes reference to that tectonic through pattern</li> <li>Materials: acrylic (laminate) sheet over plywood it's very OBVIOUSLY a laminate/ is it <i>truth</i> if it's obviously fake?</li> </ul> |
| "marble mask"                                   | Is there a line you can cross with fakery, that no amount of disclosure will save?<br>(There IS a term for that- it's called kitsch)   |
| scarpa  | <ul> <li>K Frampton (architectural historian) in particular challenges simplicity of truth to materials</li> <li>Proposes materials cannot be understood out of context</li> <li>gain meaning and value as part of constructed environment</li> <li>in lobby of Fondazione Querini Stampalia Frampton notes&gt;<sup>vii</sup></li> <li>Petrified cabinet work/ door a single sheet of travertine</li> <li>used as if it were wood/ its detailing (visible edge) makes it impossible to mistake</li> <li>Stone is revealed 2B thin sheets (cladding), not monolithic blocks</li> <li>inset luminaires &amp; brass rail toy w/ our perceptions of its dimensions</li> <li>truth to materials&gt; it is truly a veneer, a finish surface</li> </ul>   |
| Hilton high rollers<br>suite/ ando row<br>house | Way we value materials> qualitative as well as quantitative systems of assessment or measure<br>Analyzing truth to materials> reveals what is a real re: materials is largely culturally constructed   |

|                          | <ul> <li>An example: Jean Baudrillard (French philosopher) asks: how can stone be more authentic than concrete?</li> <li>Another: why do we tend to think of stone as more luxurious?</li> <li>Stone&gt; scarcity of material/ carries with it a trace of how it was formed &amp; of a specific place</li> <li>Concrete (Ando's, anyway)&gt; scarcity of labor skilled in this kind of precision</li> </ul>  |
|--------------------------|--|
| Becher silos             | More intuitive level><br>Most people (in the west) enculturated to think of concrete as utilitarian  |
| Niemeyer & hdM<br>stairs | Paradox><br>It's something designers have to unlearn in order to see the design potential (of ANY material)<br>It's something we have to keep in mind exists as a cultural value   |
| Seagrams blg: skin       | <ul> <li>Principles that develop around value not straightforward even for most dogmatic of designers</li> <li>Mies' Seagrams Blg (1958)</li> <li>Held up as an epitome of late modernism, of int'l style</li> <li>MVDR belief: architecture's appearance should directly express a building construction</li> </ul>   |
| Seagrams blg: dtls       | <ul> <li>Exterior is clad in solid bronze panels &amp; bronze-tinted glass<br/>Bronze: alloy (a mixture of metals)&gt; copper + tin and/or zinc and/or lead<br/>Unlike steel, does not rust/ dark brown color: a process of patination (gains patina)<br/>Identity&gt; a luxury material (since the Stone Age)<sup>viii</sup></li> <li>skin&gt; nonstructural but used to express the idea of the structural frame that is underneath<br/>structure itself if steel/ code req's steel to be protected from fire<br/>can't be visibly expressed</li> <li>cladding (non-structural) expresses structure</li> </ul> |
|                          | <ul> <li>Histories &amp; theories of arch &amp; INT&gt; theme/ debate</li> <li>is structure the most basic act of environmental design</li> <li>is enclosure?</li> <li>seagrams blg: another paradox</li> <li>skin (cladding) transits the message of the importance of the structural frame</li> </ul>  |
| 4 seasons int            | <ul> <li>Bronze reappears in four seasons, one of 2 restaurants @ base of blg</li> <li>once one of the most luxurious &amp; exclusive restaurants in NYC</li> <li>seen in Richard Lippold's sculpture (both rods &amp; wires supporting them)</li> <li>famous chain curtains <ul> <li>bronze now a color here: anodized aluminum chain repurposed from its intended use in industrial processes</li> <li>idea of using chains as curtains&gt; Marie Nichols, a textile designer<sup>ix</sup></li> <li>recommended by Philip Johnson</li> </ul> </li> </ul>   |
| Seagrams blg: lobby      | <ul> <li>Lobby is clad with travertine (type of marble)</li> <li>Travertine on floor extends to plaza beyond enclosure</li> <li>Clad: not monolithic/ a thickened surface, dtl'd to minimize our attention to that fact</li> <li>Criteria for material selection&gt;</li> <li>supports another miesian principle: extension of space INT continuous with EXT</li> </ul>  |

|                               | <ul> <li>can be installed inside AND outside</li> <li>Our associations with marble&gt; luxury &amp; exclusivity         <ul> <li>Travertine once classified as a limestone<sup>x</sup></li> <li>Marble often simply labelled as "metamorphic" <sup>xi</sup></li> <li>sedimentary limestone + heat &amp; pressure</li> <li>ACTUALLY different marbles: different forms</li> <li>Issue of branding as well as physical composition<sup>xii</sup></li> </ul> </li> <li>Balancing act: the austerity of modernism's tectonic language with the sumptuousness of the material palette</li> <li>One of the most expensive buildings ever constructed</li> <li>1959: 35 million (just construction) (2021; over 200 million</li> </ul>  |
|-------------------------------|--|
| quarty                        | Images of a marble quarry in Tuscany/ process has been similar for almost 2000 yrs   |
| quarry                        | <ul> <li>stone is sheared off the rock-face &amp; cut to transportable sizes on site</li> <li>some facts about this one: <ul> <li>employs about 1000 workers. All men. Requires an apprenticeship.</li> <li>Work is outside- exposed to climate &amp; the sun</li> <li>Other hazards: <i>loud industrial noise, hand transmitted vibration, whole body vibration, dust with variable quartz content, vehicle exhaust fumes and gases (underground), and intense muscle strain with spinal stress.</i><sup>1</sup></li> </ul> </li> <li>By-products of the cutting process: <ul> <li>Rubble/Italian term "ravaneti" (visible in lower right-hand image)</li> <li>Now being used in building &amp; chemical industries but also now part of the landscape</li> </ul> </li> </ul> |
| Barcelona pavilion-<br>ext    | <ul> <li>*inevitable*</li> <li>K Frampton:</li> <li>It is possible to break down the Barcelona Pavilion into a series of polarities; tectonic versus stereotomic<sup>xiii</sup>, still versus agitated, open versus closed, and above all, perhaps, traditional material versus space endlessness</li> <li>longest standing temporary pavilion in modern architectural history<sup>xiv</sup></li> <li>Are temporary pavilions architecture at all?</li> <li>One of the most deeply rooted arch values: permanence</li> </ul>   |
| Barcelona pavilion-<br>int    | <ul> <li>*reference to other classes*</li> <li>This is an image commissioned by Mies</li> <li>describes the importance of the temporal aspects of the project&gt; play of light &amp; reflection</li> <li>could argue that the photograph here is an active agent in the project's materiality, or at least our perception of it</li> </ul>  |
| Barcelona pavilion-<br>images | A project so iconic it is difficult to see with fresh eyes<br>Sometimes it's through representations we can distance ourselves from what we think we know<br>Sometimes it's through reading<br>K Frampton on Mies' columns:  |

<sup>&</sup>lt;sup>1</sup> <u>https://oem.bmj.com/content/62/6/417</u> (Journal of Occupational & Environmental Medicine)

|   | <ul> <li>neither base nor capital abstractions of the idea of support</li> <li>While columnar support is patently a key element in the structuring of the Barcelona Pavilion both technically and phenomenologically, the ontological interaction between support and burdenis patently absent</li> </ul>   |
|---|---|
| Barcelona pavilion-<br>Sanaa 01                 | <ul> <li>For fresh eyes: sometimes nothing short of physical intervention will do</li> <li>SANAA's concept for this installation (according to Kazuyo Sejima<sup>xv</sup>): <ul> <li>We decided to use acrylic to make transparent curtains.</li> <li>We imagined an installation design that leaves the existing space of the Barcelona Pavilion undisturbed.</li> </ul> </li> </ul>   |
| Sanaa 02  | <ul> <li>The acrylic curtain stands freely on the floor and is shaped in a calm spiral.</li> <li>The curtain softly encompasses the space within the pavilion and creates a new atmosphere.</li> </ul>  |
| Sanaa 03  | <ul> <li>The view through the acrylic will be something different from the original with soft reflections slightly distorting the pavilion.</li> <li>SANAA: describing not the material (acrylic) as much as its effects</li> <li>Possible: critique of common fallacy of treating glazing as if it were completely immaterial (not-there)</li> <li>Material presence is integral to the production of that project's atmosphere: a combination of effects&gt; physical, virtual, conceptual</li> </ul>   |
| acrylic   | A sidebar, in the form of making a case through images that transparent & translucent barriers really are there, producing physical material effects, with social & even political repercussions.   |
| Phantom. Mies as<br>Rendered Society            | This project (2013)> exposes hidden daily aspects of labor<br>In a lecture about materials> ALSO a call to remember that maintenance & cleanability are on the<br>table as criteria (should we consider dirt or wear as part of our material palettes? If not, then<br>bleach & ammonia?)<br>A materials palette that relies on fetishized newness or ostensible purity may no longer be<br>understood as sustainable<br>An interior has a life when its designers leave the site, incorporating all its occupants- clients/ users<br>(sure) but also those who work behind the scenes to maintain it over time |
| With Milkfind<br>something everybody<br>can use | <ul> <li>Ai Weiwei         <ul> <li>recognizes the sanctified atmosphere of the Pavilion: <i>This is a place where only gods dwell.<sup>xvi</sup></i><br/>Normally: a place where one leaves behind the everyday<br/>NOW- water in pools replaced with very everyday substances: milk &amp; coffee</li> <li>liquids are recirculated, this more now visible/ obvious</li> <li>begins to suggest a metabolism (as in a living body)</li> <li>sacred&gt; corporeal, intimately familiar</li> </ul> </li> </ul>  |
| mies missing<br>materiality 01                  | <ul> <li>Project by designers Anna &amp; Eugeni Bach titled "mies missing materiality."</li> <li>Over 1 week all finish surfaces covered with white vinyl</li> <li>Worked with photographer Adrià Goula to document the erasure</li> </ul>  |

material evidence: making the case for meaning in a material world Introductory lecture: notes

L01 INTRO

| mies missing<br>materiality 02 | Concept statement:<br>installation sets to prompt discussion about the role of material in the original design, as well as the<br>symbolism of the white surface within modern architecture. <sup>xvii</sup>  |
|--------------------------------|---|
| mies missing<br>materiality 03 | Today: introduction to the themes of the class - Explored in lectures & your assignments throughout the semester  |
| mies missing                   | Not an issue on this list that could not be understood as a critical frame for a discussion about materials/ some from today's lecture <sup>xviii</sup> .   |
| w/ text                        | <ul> <li>Marble sets the standard for other materials re: luxury &amp; status</li> <li>constructs an image of the permanent even in the context of the temporary</li> <li>thinking sustainably is a process that has to incorporate a materials past &amp; its future</li> <li>is solemn in some contexts, vulgar in others</li> <li>heavy AND weightless</li> <li>(in issue of travertine): raises issues of authenticity/ how we attribute value</li> </ul> |
| mies missing<br>materiality 04 | <ul> <li>each week: use different materials to explore these themes</li> <li>Rely on (and augment) work done in construction &amp; materials classes</li> <li>Construct a broader context of ideas in which to make decisions about materials</li> <li>Conversely: use the study materials to create a critical framework to evaluate the constructed environment &amp; our own cultural values (past, present &amp; future)</li> </ul>                       |

• via the prism of technology: from solids to claddings

• via erosion of religion: from embodied/mystical meaning to cultural/advertising meaning

• via the study of semiotics: from backdrop to language

- via the prism of economics: from value based on scarcity of material to value based on scarcity of labor
- via the discipline of history: from imitation to pedigree

- Enclosure is the basic architectural act. Original enclosure was not a solid wall but a primitive fence woven by branches used to organize social rituals. I.E architecture was not about piling stones but about spanning openings with fabric

- Textile art is linked with weaving- which possesses potential for structural arrangements AND has space defining qualities.

- Roles of clothing (and cladding): to enclose (shelter)/veil (protect)/interface (heat exchange)/demarcate (threshold)/express (identity).

- Methodologies for manipulating textiles: wrapping/folding/draping/pleating/printing/suspending

- Textile use to counteract openness of modern architecture

- Textiles can be used to both construct boundaries and to dissolve them (whether they be physical, perceptual, psychological, or social).

1 what is a real re: materials is largely culturally constructed

2 the built environment affords its own knowledge, not everything is reducible to language

Not as a polemic supporting a radical autonomy

- 3 this class: history of technology & materials VS. history of the relationships between people & things VS. not quite right...
- 4 value only partially based on cost/ scarcity/ workpersonship
- 5 I think semper & the cladding issue should come up day 01...

material evidence: making the case for meaning in a material world Introductory lecture: notes

<sup>iii</sup> TL>the cultural capital component

<sup>iv</sup> TL> the "market will decide" arbiter; note the colonization of market thinking into previously moated castles that were museums; literally "cultural consumption" as the arbiter

v The GOOD DESIGN program was criticized at the time as vulgar & commercial, unsuitable for an institution of art YET served to elevate the apprehension of everyday designed objects as worthy of our aesthetic contemplation YET further inspired a critique by designers concerned that w/in context of show in MOMA appearance would trump all other

factors (c)

vi Text> exhibition Architecture Without Architects (MOMA 11.09-64-02.07.65)

vii Studies in Tectonic Culture: The Poetics of Construction in Nineteenth and Twentieth Century Architecture (1995)

viii http://www.historyworld.net/wrldhis/PlainTextHistories.asp?historyid=ab16

<sup>ix</sup> https://www.newyorker.com/magazine/2009/06/22/chain-gang

<sup>x</sup> Merrill, George P.; Foshag, William F. / Minerals from earth and sky (1938)

<sup>xi</sup> https://pubs.usgs.gov/gip/acidrain/4.html

<sup>xii</sup> IBID

xiii Here: tectonic: adding/ stereotomic: substratcive

xiv https://www.archdaily.com/883470/mies-van-der-rohes-barcelona-pavilion-dematerialized-with-all-white-surfaces

xv https://www.metalocus.es/en/news/sanaa-installation-barcelona-pavilion

<sup>xvi</sup> miesbcn.com/project/ai-weiwei-intervention/

xvii https://www.archdaily.com/883470/mies-van-der-rohes-barcelona-pavilion-dematerialized-with-all-white-surfaces <sup>xviii</sup> TL> there could be a discussion / bridge / introduction to other lectures; quite clearly marble, as the material of temples, , or in its plasticity (ability to be carved / to represent complex form), or usurp its claim to permanence (concrete), or usurp its choice as the material to demonstrate statics (marble and wood's trabeated deployment replaced by Roman concrete arches, and the modern's demonstrations of statics via the kinds of steel)

<sup>&</sup>lt;sup>i</sup> http://www.woodworkinghistory.com/glossary\_truth\_to\_materials.htm

ii TL>Authority (and we do not grant it; it is rather a function of the particular field in question) with regard to the question of capital: possessors of high amounts of symbolic (fame) capital can create value ("goodness") in objects that may, in turn and with their endorsement, rise to a similar level of fame. Analogously, possessors of large amounts of cultural capital can define "good" in terms of appropriateness vis-à-vis the internal rules of the subfield in question: e.g., French painting, rugs, motor cars, etc. Finally, there's the au currant argument that money-capital is the "best" arbiter of "good" -- that is, that (capital) markets price "good" into objects, with the authority for an observer to say "good" ultimately resting in the volume of purchase or the price for rare items.

Scholarship of Teaching and Learning | Pedagogy | Presentation

# My Design Process: Using Critical Thinking & Processing Patterns to Teach Design

Kevin Woolley, Purdue University

### ABSTRACT

Developing mature critical thinking and processing skills is key for interior design students. The teacher's role and the methods used to teach are affected by these patterns and processes. Teachers not only provide instruction but also encourage learners to define relevant problems and incorporate solutions for themselves. Attention to critical thinking patterns and processes may help teachers identify and develop new teaching methods that elevate learning outcomes. This qualitative study examines interior design students' critical thinking and processing patterns as a cognitive system essential for helping design educators teach students how to design. Design is subjective, and teachers may wonder, How are students going to resolve this design problem? And, Why do they do it that way? The study defines the design process as a cycle that begins with 1) critical thinking and 2) continues with a chosen strategic process pattern that 3) leads to resolving the problem. The study's research method was divided into two phases: Phase 1 explored students' critical thinking and processing skills. Phase 2 scrutinized the use of design process patterns inside of two types of design studio curricula. The first phase included a total of sixty-eight university interior design students. Each student completed a survey with questions that identified ten design process diagrams. The survey did not define the design diagrams. The survey aimed to analyze their usefulness and uncover additional process characteristics from the student's responses. Finally, students drew a new model entitled 'My Design Process' based on their reactions to the survey's ten diagrams. The researcher categorized responses for each diagram according to the students' critical thoughts, which were analyzed, coded, and summarized into process patterns. The process patterns analysis confirmed not all design students think the same way; therefore, not all design processes are the same. Teachers need to account for various critical thinking and process patterns in teaching students how to design. In

phase two, the researcher superimposed critical thinking-process patterns over a traditional interior design studio model and the Critical Thinking Studio, a theoretical framework proposed by Jane Kucko and Lark Caldwell (1995), to see if there were congruent points of alignment between the two teaching methods. The models were chosen because they represent different approaches commonly used to teach interior design. In the traditional studio model, the teacher views students as a collective whole and presents project-based instruction sequentially. Everything is predetermined, with little opportunity for changes or adjustments. In the Critical Thinking Studio model, the teacher's role switches from information provider to facilitator. A preliminary plan for execution is introduced to students, followed by free inquiry and problem solving under the guidance of a skilled teacher. The Critical Thinking Studio teaching method handled variances between students' critical thinking and processing better than the traditional studio. The method also challenged the student to be truly critical: thinking, reflecting, and making decisions to formulate a design solution. As shown in the Critical Thinking Studio, the researcher concludes that teaching students to solve design problems means engaging learners from multiple perspectives.

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# The Design Process - Mystery Solved !!

#### Introduction

This handout will guide you to collect all of the information and criteria necessary for successfully completing your design project. In the book, <u>The Interior Plan</u>, author Roberto Rengel says:

"Planning interior spaces can be one of the most enjoyable tasks performed by designers. It can also be one of the most frustrating for the novice designer. In some ways, it's like solving a jigsaw puzzle, except that there is no one right answer and there is no picture available of what the space is supposed to look like at the end." p.62

This is why smart people over time have devised different design processes to help designers design.

#### What is a Design Process?

Everyone designs. The teacher arranging desks for a discussion. The entrepreneur planning a business. The team of Purdue students building a rocket. Their results differ. So do the goals and scales of their projects. *Even their actions appear quite different.* A design method is merely a list of steps that gradually lead from beginning to end. However, not all designers think the same way and not all design methods are the same. In fact, I have documented over 130 design processes that address how to design. Our processes determine the quality of our designs. If we want to improve our designs, we must improve our *process*, not just our design products. This is why we study the design process and continually redesign the way we design.

#### **Examples of Design Processes**

How do we design? Why do we do it that way? Can we do it a better way? Next, you will see examples of various design processes collected from a 2-second Google search. Your task is to study each process and then make a logical assessment about the value or nonvalue the process steps have for helping you design.









## The Design Process - Mystery Solved !!

#### My Design Process Looks Like This:



### My Design Process Looks Like This:

This the design process that I agree with the most. It would be the same kind of process that I would use if I was doing a project, myself. I like how the process diagram has a spot in the center for improving the solution. I believe that the entire process does revolve around improving your ideas, solution, or final product. There is and never will be an absolutely 100% perfect solution because there's always, somehow, a better solution out there. This design process gives you the ability to find that better solution and then even improve off of the solution that you think is the best.



### (Other Student Process Models)

This is a non-linear design thinking process which I relate most to. I like how it allows for flexibility and are not forced in a sequential machine like pattern.

Empathise: Understand the problem you are trying to solve.

<u>Define</u>: Analyze information and observations to define core problems.

<u>Ideate</u>: Brainstorming and identifying new design solutions. This is also known as the design development stage.

<u>Prototype</u>: Create a representation of what the space will look like with renderings to share with clients.

<u>Test</u>: Here you can observe how the design solutions functioned and redefine problems to better understand the space and users.

### My Design Process Looks Like This:

I like that my process has the identification of the problem and also identifying the criteria and strengths.



# Ungrading the Studio: Using Professional Development Goals to Evaluate Student Success in a Commercial Studio Course

Holly Murdock, Utah State University

### ABSTRACT

Assigning grades to gauge student success can be problematic. Research has shown that grades are not an effective motivator for students to achieve and instead increases anxiety and have a negative effect on learning and mental health (Chamberlin, 2018). Obtaining a satisfactory grade can become the goal for students, not the opportunity to learn, which can manifest as an aversion to risk-taking and an over-reliance on strategies that have proven successful in the past (Blum, 2020). Even with detailed rubrics, grading is subjective, tends to rank students against each other, and is not always an accurate measure of student achievement (Blum, 2020). Rather than grades, it is consistent, individual, and actionable feedback that motivates students to succeed. Feedback also helps to develop trust between students and instructors and to enhance cooperation among a cohort (Chamberlin, 2018). With this in mind, the concept of ungrading, or deemphasizing the use of points to gauge learning, has been applied to a junior-level commercial design studio. Students were introduced to personal development plans used to determine employee growth in a major corporate commercial design firm. At the beginning of the semester, each student set a personal development goal focused on the skills they wanted to develop. Plans included building technical abilities, learning strategies for time management, and improving confidence in their work. Feedback regarding these goals was given to each student throughout the course, and as students completed three design projects, they made consistent progress toward reaching their goals. Students completed self-assessments, met with the instructor at the end of each project, and together they determined their success. Final course grades were based on progress reaching these individual goals and the completeness of the work rather than on project requirements. The goals of this form of ungrading are to reduce student stress, increase
risk-taking and creativity, improve student's sense of accomplishment, and introduce students to the expectations and types of assessment used in commercial design firms.

#### REFERENCES

Blum, S. D., Kohn, A., & Saffel, T. (2020). Ungrading: Why rating students undermines learning (and what to do instead). West Virginia University Press.

Chamberlain, K., Yasué, M., Chiang, I. The impact of grades on student motivation. Active Learning in Higher Education, 00(0), 1-16. <u>https://doi.org/10.1177/1469787418819728</u>

Feldman, J. (2020, September). Taking the stress out of grading. Educational Leadership, 14-20.

## **ACTION PLAN**

This form is to be completed by the student and the instructor jointly and will serve as the student's action plan for the semester. Please outline your key development goal, including what you want to accomplish, how you will measure that accomplishment, and what resources you may need to fulfill your plan. When creating these goals remember to create SMART goals (Specific, Measurable, Actionable, Realistic, and Timely).

#### STUDENT NAME:

| PROFESSIONAL<br>DEVELOPMENT GOAL | What do I want to accomplish this year?          |
|----------------------------------|--|
|                                  |  |
| ACTION                           | What actions will I take to accomplish the goal? |
|                                  |  |
| RESOURCES/SUPPORT                | What resources or support do I need?             |
|                                  |  |
| MEASURES                         | How will I know the goal has been accomplished?  |
|                                  |  |
| STUDENT                          | INSTRUCTOR                                       |

#### INSTRUCTOR SIGNATURE: \_\_\_\_\_\_ SIGNATURE: \_\_\_\_\_

DATE:

## PROJECT 1 ACTION PLAN

For the first project this semester set a prelliminary goal focused on initial action toward accomplishing the professional development plan. This first goal should be targeted and possible to accomplish within three weeks.

#### STUDENT NAME:

| INITIAL<br>DEVELOPMENT GOAL | What do I want to accomplish during Project 1?   |
|-----------------------------|--|
|                             |  |
|                             |  |
| ACTION                      | What actions will I take to accomplish the goal? |
|                             |  |
|                             |  |
|                             |  |
| RESOURCES/SUPPORT           | What resources or support do I need?             |
|                             |  |
|                             |  |
| MEASURES                    | How will I know the goal has been accomplished?  |
|                             |  |
|                             |  |
|                             |  |

#### STUDENT SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

## **PROJECT 1 SELF-ASSESSMENT**

This form is to be completed by the student after the completion of Project 1. Describe your progress made on the professional development goal over the course of the project.

#### STUDENT NAME:

| INITIAL PROGRESS | How did the progress toward your goal impact your project? |
|------------------|--|
|                  |  |
|                  |  |
|                  |  |



| IMPROVEMENT | How could you have improved your work on this project?            |
|-------------|---|
|             |   |
|             |   |
|             |   |
| DEVELOPMENT | What are the next steps you want to take to accomplish your goal? |
|             |   |
|             |   |
|             |   |
|             |   |
|             |   |
| DATE:       |   |

## **PROJECT 1 FEEDBACK**

This form is to be completed by the instructor after the completion of Project 1 to provide feedback and suggestions for future success.

**STUDENT NAME:** 



How improvement in the skill can be developed.

CONTINUED Suggested next steps in skill development. DEVELOPMENT **INSTRUCTOR** SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

FINAL SELF-ASSESSMENT

This form is to be completed by the student at the completion of the course.

## STUDENT NAME:

| PROFESSIONAL<br>DEVELOPMENT GOAL                                 | Were you successful in accomplishing your development goal? |  |   |  |  |
|--|---|--|---|--|--|
|  |   |  |   |  |  |
| STRENGTH   | What new stren  | gths have you accom                            | plished this semester?                        |  |  |
|  |   |  |   |  |  |
| CONTINUED<br>DEVELOPMENT   | How will you co   | ontinue to improve ye                          | our skills moving forw                        | vard?  |  |
|  |   |  |   |  |  |
| SUCCESS  | How do you rat<br>Describe why y                            | e your success accon<br>ou rate yourself this  | nplishing your goal thi<br>way on the back.   | s semester?                                      |  |
| Excellent Ver<br>I accomplished I'm<br>more than my<br>expected. | <b>ry Well</b><br>happy with<br>progress.                   | <b>Average</b><br>I could have<br>done better. | <b>Inferior</b><br>I didn't try<br>very hard. | <b>Fail</b><br>I didn't<br>improve my<br>skills. |  |
| student<br>signature:  |   |  |   |  |  |

DATE: \_\_\_\_\_

Scholarship of Teaching and Learning | Pedagogy | Presentation

## "Frankenstein Chair": A Speculative Approach to the Use and Misuse of a Tool

Kory Beighle, Miami University

### ABSTRACT

The project, entitled "Frankenstein Chair," is an adaptation of a common design exercise with a twist. It builds upon the questioning lens of Mary Shelley's 1818 Frankenstein; or, The Modern Prometheus, which engages nearly all the ethical, philosophical and practical problems that humanity faces in its relationship to technology today: Identity, Consumption, Media, Hacking, Remix and Exposition, and the possibility of a new humanity. Here, we consider the pedagogical framework, process, and outcomes of a four-week project for an upper-level design studio, exploring the imperatives laid out by Shelley through the intentional re-making of the tool/tooluser relationship. The project begins with the identification/selection of a chair, a common human tool. It then explores misuse of the chair through the lens of Bruno Munari's October 1944 photo essay in Domus where he writes, "I seem to understand that interior design does not mean inventing a new form of a certain piece of furniture, but rather putting a common piece of furniture...in the right place." (Munari 1944) The process considers the place of a chair as it dictates to a human body, while also creating space, identity, and comfort. We also consider the way a chair's occupant(s) reacts against or resonates with these dictates. Misuse and transgression against the chair's being serve as analysis that gives way to deviation and projection. Projections are actualized in the physical artifact through deconstruction, as its elements are laid bare and then move back toward re-composition with new components and materials. Addition and subtraction alter the chair along the lines of the initial transgressions to revise structure, geometry, function, symbolism, aesthetics, comfort...and so on. The final presentation of the work presents the chair in three forms, along the lines of Joseph Kosuth's project "One and Three Chairs," a tripartite presentation that opens a parallax view of the tool, its misuse, and the artifacts of that process to unveil layers potentially unseen. With the project

having been executed, it is important to consider the pedagogical underpinnings of the project and its framing, the way these underpinnings impact the process of the project and its directives, and the outcomes of the project - artifacts, but also its ability to address the issues of tool use within the design studio and beyond. One of the vital pedagogical assumptions of the project to be explored is that the misuse of design tools begins with the misuse the educational process itself. By introducing the students to the Anthony Huberman's text For the Blind Man In the Dark Room Looking for the Black Cat That Isn't There, various critiques of pedagogy are established from the outset. The project explodes into a performance of mis-use – an impromptu game of call and response dictated and documented by the students. From this point, the process seeks to consider the transition from collective performance toward independent action with and upon the chair artifact, through the lens of Allan Wexler's Absurd Thinking: Between Art and Design. The discussion concludes by considering the outcomes of the work through critique of the production and consideration of trajectories that are set up. Is tool misuse possible in the way this project implies? Are these critical interactions with design tools valuable for the growing designer? Is the chair an appropriate tool to place at the heart of the project given the questions at hand? Is the standard presentation of a design a satisfying conclusion for such a project or could the process and pedagogical underpinnings suggest new modes of presentation along the lines of the collective performance that emerged at the outset of the project?

#### REFERENCES

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Kosuth, Joseph "One and Three Chairs," Mixed Media, 1965, MOMA New York Shelley, Mary, Frankenstein; or, The Modern Prometheus (New York, New York: Penguin Rndom House LLC, 1818) Wexler, Allan, Absurd Thinking: Between Art and Design, Ashley Simone (ed.) (Wilmington, DE: Lars Müller Publishers, 2017)

#### INV01: FRANKENSTEIN CHAIR

#### **PROJECT DESCRIPTION**

Since *Frankenstein; or, The Modern Prometheus* was published in 1818, Mary Shelley's story has existed as a haunting portrait of humanity in an age of technological progress. Contrary to the superficial narrative of a scary beast that persists in our collective imagination, a close reading of Shelley's tale conveys a nuanced parable transcending the exquisite corpse while foreshadowing nearly all of the ethical, philosophical and practical problems that humanity faces in its relationship to technology. Frankenstein stands as a warning sign in the landscape of events, which exposes issues of *Illusion, Fear, Consumption, Simulation, Mediality, Surveillance, Immersion, Cyborgism, Hacking, Remix and Exposition*, while suggesting the possibility of a new humanity. In order to set a common conversation and agenda for the studio, we will approach questions of technology through the spirit of perversion and progress the Mary Shelley has laid out for us.



Covers of Frankenstein by various artists

#### **SYNOPSIS**

In this exercise students will be asked to engage their imagination as they explore the use and misuse of a common human tool. These explorations will allow the student to unpack the transformational possibilities of the tool while exposing its various layers of tool-being.

In Phase 1 of the project, we will seek out our tool – a chair. In Phase 2, we will explore misuse of the chair through the seminal work of Bruno Munari and Eadweard Muybridge. We will consider the way a chair dictates human posture and movement, while also creating space. At the same time we will consider the way a chair's occupant(s) reacts against (or resonates with) these dictates. We will misuse and transgress against the chair's being, as documentation / analysis give way to deviation / projection. In Phase 3 of the project, we will begin to actualize our documentation – projection by enacting possibilities in the physical artifact. We will take this prompting and deconstruct the chair, using the process as a way of drawing attention to the components of the artifact and their relationships to one another.

In Phase 4, we will bring in new components and materials and explore the possibilities of their integration into the joints and components of the original artifact. Addition and subtraction alter the chair along the lines of our Phase 2 transgressions. New materials and components revise structure, geometry, function, symbolism, aesthetics, comfort...and so on. Said another way, the process interrogates the tool's instrumentality, disciplinarity, mediality and/or its capacity to organize human behavior. In Phase 5, we will explore the performative character of our new tools by documenting our work collectively.

#### GATHER\_ Phase 1

Each member of the studio must bring in a chair no later than Friday, August 27<sup>th</sup>.

When selecting your chair, use a high level of discretion. Consider constraints that you may face in deconstruction and reconstruction. Consider the original intent of the artifact and the commentary you may set up by acting against the symbolic object. Consider the entirety of the process as much as possible and ensure that your foresight leaves you comfortable with the task at hand.

During studio we will explore misuse of the tool. Documentation of the misuse will begin and will continue through the weekend.



#### CONSIDER\_ Phase 2

Students must document at least (3) different sequences of misuse of their tool in the spirit of Eadweard Muybridge's work. This will force acknowledgement that misuse is sometimes temporal in nature. Sequences must be of at least 10 images documenting a continuous flow of movement.



image by Eadweard Muybridge

Students must also document as many other static moments of misuse as they can conceive of. Consider not only the act of misuse, but also the chair's orientation, the bodies posture, the chair's iconography, the body's activity, the setting of the misuse and the space created by the intersection of these things. Attempt to treat each as a series of variables and constants as if the process were a scientific experiment.

Once prepared for presentation, analyze the documentation by drawing, collaging, destroying and/or remaking the images to emphasize joint and individual componentry. Expose opportunity.







image by Bruno Munari

image by Bruno Munari

student work

#### **DECONSTRUCT\_ Phase 3**

Building off of your rigorous analysis, deconstruct the chair. Knoll its components in an intentional way on the floor and document. Draw an exploded axon of the deconstruction in a medium of your choice.



image by instructor

#### image by the Office of Charles and Ray Eames

#### **RECOMPOSE\_ Phase 4**

Explore small moments of reconstruction, first through drawing and then through physical mockup. Document each and every iteration in a consistent way.

Present the remade artifact along with the documentation of your explorations and the process.



image taken from Alan Wexler's book Absurd Thinking: Between Art and Design

#### **INITIAL PERFORMANCE**



#### OUTCOMES



























Scholarship of Teaching and Learning | Pedagogy | Presentation

## Story of Seven Fires: STEM Education Through Spatial Design

Allison Howard, Oklahoma State University Katie Allen, Oklahoma State University Piper Bott, Oklahoma State University Tilanka Chandrasekera, Oklahoma State University Nicole Colston, Oklahoma State University Cynthia Orona, Oklahoma State University

## ABSTRACT

Spatial design involves the use of thinking and visualizing space, and is used as a general umbrella term commonly associated with the domains of architecture, landscape architecture, landscape design, and interior design. Spatial thinking is a crucial skill for student success in many STEM degrees (Newcombe, 2010) and is defined as a combination of three elements: concepts of space, tools of representation, and processes of reasoning (Downs & DeSouza, 2006). Even though not traditionally considered as STEM fields, domains such as architecture and interior design often work in collaboration with other traditional STEM fields such as engineering disciplines. Furthermore, spatial skills are utilized in a variety of STEM disciplines that could range from a biologist focusing on the double helix of a DNA structure, to an engineer designing and manufacturing 3D structures, to an environmental scientist modeling geographic systems. Research suggests that spatial skills can be enhanced through spatial design education (Stringer, 1971; Sarı, 2010). These methods of improving spatial intelligence offer guidance for expanding spatial design curricula using VR/AR technologies to develop critical spatial abilities for a wide range of STEM careers. To be a part of the future STEM workforce it will be important for students to have the skills and expertise of using these types of technologies. Introducing students at an early age to these technologies will prepare them for the future workplace. Current research indicates that traditional classroom learning alone is not sufficient to teach students about science or the opportunities for STEM careers (Dierking 2010). Afterschool

programs have had success in helping those from underrepresented communities (Afterschool Alliance, 2011). For this project we use the Generative models of culturally relevant teaching framework (Eglash et al., 2020) to focus on developing narratives that inform students of cultural idioms and translations into creative architectural forms using the immersive nature of Virtual Reality (VR) and Augmented Reality (AR) technology. The use and exposure to technology in education can be a means of motivating students. When used in education, technologies such as VR have been known to facilitate knowledge acquisition (Mikropoulos, 2001). Some studies indicate that technologies such as VR and AR offers motivation to students to improve information encoding, retention, and later performance (Huang, Rauch, & Liaw, 2010; Stone, 2001). Furthermore, Hsu, Lin, & Yang, (2017) states that using technologies such as AR increases the motivation of students to pursue STEM based majors and careers. These studies suggest that innovative teaching using technology will enhance scientific research, upgrade the technological capabilities of industrial sectors by creating an upgraded workforce, aligning with United Nations Sustainable Development goals focusing on building resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation. This presentation documents a federally funded project to provide after school STEM education through VR, AR and 3D printing using a spatial design focused curriculum for Native American middle school students. The curriculum consisted of 7 modules and were developed around Native American creation stories that were related to that tribe. Our research questions focus how culturally situated, spatially focused STEM curriculums improve motivation and of spatial abilities in students through the use of immersive technology.

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# Post-Truth and the Significance of Research and Critical Thinking in the Studio

Sonya Grace Turkman, University of Nebraska-Lincoln

### ABSTRACT

The current post-truth era of the state of the social and political systems worldwide highlights the timely significance of research methods and critical thinking skills in the interior design studio. While post-truth is not a new phenomenon and is discussed in terms of education (Peters, 2017); politics and the media (McIntyre, 2018), its current accelerated affects are the result of the disintermediated information landscape enabled by social media. In 2006 Tara Brabazon penned the Google Effect that flattens sources of knowledge where "the information age requires information management" (p. 160). Today where Google search terms once reigned, social media giants Instagram, Facebook, Pinterest, Snapchat, TikTok, and more use algorithmic logic to select, sequence, and mete out the information with little to no regard for accuracy, review, or expertise. As design educators we must consider new curricular interventions that bring an awareness to the quality and sources of the information students receive and enact within their projects. By modeling information literacy through research and critical thinking within the studio curriculum, students become discerning, active consumers of information. This project infused research methods and critical thinking skills into a 3rd year studio to develop these valuable skills. The guiding intention was to present research and critical thinking as it applied to daily life. The rationale for this curriculum intervention manifested in the increasing fragility of order and the flow of quality information following the fallout of the recent social and political unrest in the United States and abroad. The COVID pandemic, threats to democracy, and numerous humanitarian crises left voids in the deeper understandings of these complex issues. This studio curriculum scaffolded research and critical thinking through peer learning, workshops, and learning-by-doing practices within the studio. Peer-learning had students express their research interests among like-minded peers and package that interest in a way that led to

qualitative and quantitative data sources. Studio workshops focused on how to prioritize data sources and analyze their content. Students then worked to create short presentations on their findings. These presentations were shared in the studio to increase awareness of the broader, complex issues impacting interior design. The wide array of projects included projects focused on the implication of the Tenement Housing Act on affordable housing, the transformation of an urban city block using GoogleMaps, the use of student participation to design a new student health center on the University of Chicago campus, and innovative floating classrooms in Bangladesh. Each project identified a narrowly constructed research question, identified sources of information and data, classified data as qualitative or quantitative, analyzed data, and identified the "big idea" that could be implemented in design. Sharing the findings with the studio helped students develop presentation skills, as well as building the knowledge of issues they may not have previously considered. By tracing the research back to interior design practice students also developed new insight into the intensive interdisciplinary nature of the field. The projects and resulting studio discussions highlighted the need for designers to stay current within interior design, but also with current events in ways that go beyond social media posts. As we enter some semblance of normalcy after the turmoil of the past few years, there is the opportunity to re-define and re-set how we consume and disseminate information. In explicitly allocating studio resources to the undertaking of undergraduate student research, this curriculum intervention centers research at the forefront of what interior designers do holding research a place as more than a checklist to be completed at the beginning of a project.

#### REFERENCES

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## Post-Truth and the Significance of Research and Critical Thinking in the Studio

#### APPENDIX



## Research Question

How has the combining of all the health practices into one building affected the student's performance at the University of Chicago?



#### Identify methods

In the color cellection phase, I gathered statistics and reviews on topics and locked of what they were before merging of three sociate buildings into the and other to be beed idee and understanding on tow it has affected the student and community members that use the welfness center services.

&

#### Qualitative

- W
- \*
- \*
- COURTERIVE
  Control of the pilling activity of the pilling of the standards were provided by the pilling of the pillin

- \*
- controllar evaluation of the integration with response west control of the anti-integration of the integration with include or topics lave or moment provide overwell that the integration with include or topics lave or moment construction between that the integration with include or topics lave or moment constructions and the integration with include or topics lave or moment operations of the construction of the integration \*

#### Quantitative Data

- + 91% in 2019 and 92% in 2020 and 92% in spring 2021 \* Engagement within the UChango Health center increased by
- 25% + 4.4 storicting on Google Reviews \* The UChicago has an A= Roing on Niche.
  - B4 score for Complet which includes range for results center and other compusious buildings.
    - norecsed since 2020 could be related to the oring of real hiservices in one building.

#### Conclusions

In conclusion, it is beneficial to the design to include the student's, staff, and community in the design planning phase. In this case, they expressed how they wanted the wellness center to be a "welcoming environment where holistic care is provided." The design team focused on this desire in the new wellness space. The design team states that "The overal concept for the project is 'A Delicate Touch.' which refers to both the way the new structure engages with the existing building, as well as how students are cared for at wellness center." This made students and staff feel like they were valued, welcome and heard. Ultimately, it is important when designing educational facilities to consult and focus on the students and community who use the space to inform the overall design.

Kogo Skoleti Aetholi C



## Post-Truth and the Significance of Research and Critical Thinking in the Studio

APPENDIX



## Post-Truth and the Significance of Research and Critical Thinking in the Studio

## APPENDIX



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## Generation Z and Social Interaction: How to Capitalize and Adapt the Interior Design Studio

Michelle Pearson, Texas Tech University Erin Hamilton, Texas Tech University

### ABSTRACT

According to the 2020 CIDA Student Summary Report, over 80% of the students enrolled in CIDA accredited programs belong to GenZ. This generational cohort, representing the vast majority of interior design students, has a number of distinctive traits that make them unique from previous generations, most notably their interaction with technology. GenZ is reported to spend approximately 9-hours per day in front of a screen (Rideout, 2015). Of this time, approximately 73% is used to communicate with others. In a matter of seconds, this group is able to connect with and maintain constant interaction with other members of their generational cohort. This desire for constant social interaction has made a significant impact on teaching strategies in higher education (Rosen, 2010; Tapscott, 2009) and attitudes related to learning (Thompson, 2013). But how has it impacted the interior design classroom? This presentation explores the following research questions: 1) What are the preferred learning styles of the average GenZ student and how do they translate to learning environments? and 2) How can these preferences, specifically the need for social interaction, be capitalized upon in an interior design studio? To answer these questions, researchers conducted a comprehensive literature review. The keyword search included GenZ, motivation, learning style, information seeking, technology, communication style, flipped classroom, and social media. The results of the literature review revealed that GenZ students are motivated by a world that provides stability, predictability, and collaboration. For example, this group appreciates an environment where they can have high achievement while also taking minimal risk. They are less motivated by environments that require them to innovate and/or think laterally (Ben-Hur & Ringwood, 2017). Instead, these students prefer to multitask, as they feel this is speeding up the process of learning (Olson, 2009). This group is motivated by and prefers to learn in an environment where they can

collaborate with their peers and prefers tasks that require less independence. For this group, learning is best when it is in an environment where they can come up with ideas collectively and receive validation from their peers (Ben-Hur & Ringwood, 2017). This group of students also desires constant and honest feedback and to work in a democratic and inclusive environment. The desire for social interaction was a reoccurring theme throughout the literature. There are a number of adaptations that can be made to an interior design studio to support these motivators and preferred learning styles. For example, because socialization and peer validation are important, projects could be structured to allow for peer-evaluation feedback and 'peer grading' prior to the due date. This supports their desire for stability and collaboration. Courses could incorporate collaborative technologies (i.e Miro, Teams, or social media applications) to facilitate flexibility and teamwork. Project types that appeal to GenZ would allow for precise, systematic work that is often technology rich. This presentation will outline a number of strategies, similar to those just outlined, to support the GenZ student and suggestions on how to capitalize on the need for socialization in a studio environment. This generational cohort is unique in their need social interaction and there methods that educators can employ to support this defining generational trait. By recognizing students' digital habits and desire for socialization, interior design educators can create authentic, active, cooperative learning opportunities in the classroom.

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## A Collaboration of Majors to "Make a Difference"

Leisha Bridwell, Stephen F. Austin State University Sally Ann Swearingen, Stephen F. Austin State University Jennifer Luque, Stephen F. Austin State University Nathaniel Walker, Stephen F. Austin State University Judy Kugle, Stephen F. Austin State University

### ABSTRACT

Engaging diverse disciplines in collaboration in interior design (INDS) and construction management (CMGT) was the f0cus of the 2021 Student Charrette. CIDA Professional Standard 5 mandates that student work must demonstrate the ability to effectively collaborate with multiple disciplines in developing design solutions; Standard 6, addresses program expectations for public service. (CIDA, 2020). A charrette is defined as a type of participatory planning process that harness the talents and energies of all interested parties to create and support a master plan (San Diego, 2021). Service learning is a form of experiential education where learning occurs through a cycle of action and reflection as students seek to achieve real objectives for the community and deeper understanding and skills for themselves (SERC, 2021). Faculty believe using a charrette to integrate service, vertical, and multi-disciplinary-learning is a great approach to addressing CIDA requirements and university goals. In preparing for this vertical learning event, INDS/CMGT faculty joined forces to plan, promote, and advertise the charrette. Faculty utilized a project that IDEC launched several years ago called "Make a Difference." Students from both majors participated in an informational meeting. Upon entering the room, students signed up by major and classification based on the INDS/CMGT courses they are currently taking and not based on actual credit hours earned. While one CMGT and one INDS faculty introduced the project, purpose, and scope of the charrette the other three faculty members divided the students into diverse teams. This team structure established a foundation for vertical learning wherein upper-level students peer mentor lower-level students while the lower-level students contribute their enthusiasm and energy (Drury, 2013). The perfect team

structure is one that combined freshman – seniors with one of the two upperclassmen with two lower classmen, one per major, CMGT and INDS. The charrette had five phases: project introduction and team structure phase, project planning and implementation phase, presentation and evaluation phase, selection of the winning team, and reflection and assessment phase. Phase 1: Students were given information about the project dynamics and instructed on what they could and couldn't do for a design. Teams were assigned based on variables such as classification and major. Phase 2: Teams were given three weeks to create a product/design or modify something already that existed that could be improved for better performance. Once the plan was completed, teams implemented the plan of their design, and finally, the product was tested for quality. Phase 3: For presentation purposes, teams were divided into four groups with one faculty member managing approximately four teams who presented their functional products to the students in the group. Within each faculty's charge, students voted on the best team's "make a difference" project and adheres to the criteria. Team submissions that didn't meet the criteria, will be disqualified. Phase 4: The four finalists from each group presented to all INDS and CMGT faculty and students. Faculty secured a monetary donation to award to the best "Make A Difference" idea. Faculty prepared a social event at the time so that students could enjoy engaging with students as they now had made friends. Phase 5: A post reflection survey was administered to gather data on the positive/negative aspects of the charrette's effectiveness for engagement, collaboration and service-learning. Faculty want to use this charrette theme again minus the in-use evaluation requirement. The biggest takeaway was the collaboration and service students gained at the beginning of a new academic year. Faculty observed interaction between upper and lower level students as well as between construction management and interior design students.

#### REFERENCES

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blog/2013/jan/08/vertical-teaching-guide-early-exam-entry. Imasocialentrepreneur.com. webs.co.com. (n.d.). Retrieved September 29, 2021, from http://imasocialentrepreneur.com.webs.co.com/.

National Charrette Institute (NCI). (n.d.). What is a charrette? - san diego. City of San Diego. Retrieved September 29, 2021, from https://www.sandiego.gov/sites/default/files/gvchardesc081110.pdf.

SERC. (2018, May 7). What is service-learning? Service Learning. Retrieved September 29, 2021, from https://serc.carleton.edu/introgeo/service/what.html.

Appendix



Students are listening to information about the charrette project and the expectations and parameters. Groups are formed then meeting to begin the design brain-storming process









One team's design from sketches to use.



Scholarship of Teaching and Learning | Pedagogy | Presentation

## The Design Student Competition as the Driver in the Interior Design Studio: Exploring Students Perceptions

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## ABSTRACT

In the context of interior design education, studio projects frequently start with research on the design theme and context. Still, often there is no strong link between the research and its application in the project and the resultant design product. One pedagogical approach that directly links knowledge acquisition and application is the Project-Based Learning (PBL) model, which organizes learning around projects. Thomas (2000) describes PBL instances as those promoting a project as the central teaching strategy through which students encounter and learn the concepts of the discipline, rather than those in which a project development follows traditional instruction to provide illustrations or examples. A PBL also focuses on questions that drive students to encounter (and struggle with) central concepts and principles (Thomas, 2000). The idea of assigning projects to students is not a new one. However, Marx, Blumenfeld, Krajcik, and Soloway (1997) note that attempts at PBL often fail when instructors do not base their courses on the complex nature of student motivation and knowledge required to engage in what is often considered cognitively difficult work. To address such shortcomings, I looked at student competitions to investigate their role in supporting students' motivation and the knowledge they need to engage in interior design projects. Several studies have shown that leveraging competitions motivate students and enhance the learning goals inherent in a design project (Wilson and Choi, 2020). Thus, a 6-week course was designed with an existing kitchen design competition as the driving question. The course title, content, and assessments were designed to answer the driving question. The competition was also leveraged so that the project deliverables would satisfy the entry requirements while the prizes could add value to successful project completion. Teaching-as-Research (TAR) efforts allow the deliberate, systematic, and

reflective use of research methods to develop and implement teaching practices that advance learning experiences and outcomes for students and teachers (CIRTL Network, n.d.). In this TAR, institutional teaching evaluations gauged students' assessments of the overall course effectiveness, including teaching style and student attributes like interest and effort to learn. Students' perceptions of the competition were assessed by adding an open-ended question to the evaluation (i.e., how has the design competition influenced your engagement in this course?). Responses were offered by 11 of the 16 students (69%) anonymously. A coding analysis of these answers demonstrated an overall positive impact of the strategy on students' perceived engagement in the course. Yet, their offered rationale for such perceptions varied significantly, revealing four major themes: designing for real-life, thinking outside the box, having a structure, and improving work ethic. Some of these results were expected based on the review of a robust literature on the topic. For instance, Gordon (1998) distinguishes between academic challenges, scenario challenges, and real-life challenges. PBL incorporates real-life challenges where the focus is on authentic (not simulated) questions and solutions can be implemented (Thomas, 2000). Thus, the results recognized the relevance of project-based learning to the higher education design studio context. Nonetheless, results also revealed other motivations behind students' perceived engagement in the course, such as the reported improvement in work ethic. These findings uncovered potential advantages of leveraging design student competitions as drivers in PBL that were not yet fully explored in the context of an interior design studio and warrant further research. The lessons learned from this study are informing the development of a new and more comprehensive TAR project that aims to investigate the topic more systematically and assess the contextual suitability of the proposed strategy.

#### REFERENCES

CIRTL Network (Center for the Integration of Research, Teaching and Learning). Available at: https://www.cirtl.net/

Marx, R. W., Blumenfeld, P. C., Krajcik, J.S., & Soloway, E. (1997). Enacting project-based science: Challenges for practice and policy. Elementary School Journal, 97, 341-358.

Thomas, J. W. (2000). A review of research on Project-Based Learning. San Rafael, CA: The Autodesk Foundation.

Wilson W., Choi Y.M. (2020) Leveraging Design Competitions to Enhance Learning Goals and Student Motivation Within a Studio Project. In: Di Bucchianico G., Shin C., Shim S., Fukuda S., Montagna G., Carvalho C. (eds) Advances in Industrial Design. AHFE 2020. Advances in Intelligent Systems and Computing, vol 1202. Springer, Cham.

### **Syllabus**

#### I. Course Description:

The Environmental Design Research scholarship has widely recognized "home" as a dynamic system that embraces its life within. In the home environment, a bond between person and place is created through everyday use, and with time, meanings are created. In this course, we will focus on the home kitchen to investigate how the design, the meaning, and the use of these environments are intimately related to various cultural aspects, such as meaning. Understanding person-environment interactions ensure a more successful ID practice and will be demonstrated by designing a residential kitchen\*.

\*This final project meets the guidelines of an international design competition (optional).

#### II. Learning Objectives:

Upon successful completion of the course, you will be able to:

- Describe possible relationships between food and ID
- Describe the potential advantages of taking a cultural approach to ID
- Explore research methods appropriate to a cultural approach to ID
- Identify functional and culturally meaningful uses of a home kitchen
- Distinguish different layouts and design styles of home kitchens
- Design a culturally responsive home kitchen
- Specify finishes and selection appropriate for the designed home kitchen
- (Optional) Enter an international kitchen design competition

#### **III. Course Requirements**

#### • Computer and Internet Connection

You will need to have access to a computer with an Internet connection to complete this course. For example, you can use a desktop computer with a webcam and headphones with a microphone or a laptop with a built-in webcam and mic, which will allow you to interact with your professor and peers synchronously and asynchronously virtually.

#### • Access to the Canvas Course space

You are expected to <u>get familiar with our course space and check it frequently.</u> Canvas will be our main form of communication and repository of course materials, assignments, and grades. Please visit the <u>Canvas student support</u> page if you need help.

#### **IV. Required Textbook and Readings**

There is **NO** required textbook for this course. However, **short readings** are assigned. These readings (a mix of academic papers and chapters, and media articles) will be available on Canvas.

#### V. Course Delivery Description

The course will be delivered online, about 60% being synchronously and 40% asynchronously.

#### 1. Lectures:

Lectures will be delivered either synchronously (via zoom) or asynchronously (pre-recorded video lectures available on Canvas), as detailed on the **Course Schedule** attached on the last page of this document. You are expected to attend synchronous lectures\* and demonstrate engagement with asynchronous material by thoughtfully participating in discussions and developing high-quality exercises and projects.

\*If you must miss a synchronous lecture (for any reason), you can watch the zoom recording that will be available on Canvas <u>for one week from the day of that lecture</u>. To receive attendance/participation credit for a missed lecture, you must write a one-page reflection after watching the zoom recording and submit it within one week of your absence.

#### 2. Exercises:

You are expected to demonstrate knowledge by developing two exercises based on specific instructions and as indicated on the Course Schedule.

#### 3. Project:

You are expected to demonstrate knowledge by designing a residential kitchen, based on the project description and as indicated on the Course Schedule.

#### 4. Desk Critiques:

You are expected to demonstrate knowledge by participating in desk critiques with your professor as indicated on the Course Schedule. Participation in these will be graded based on your meeting <u>specific goals</u>, as indicated on the Course Schedule.

#### 5. Exams:

There are **NO** exams in this course.

#### VI. Grading Method

There are three weighted assignment groups, for a total of 100 points:

| Participation (15%)                      | Exercises (35%) |                            | Project (50%) |                                 |        |
|--|-----------------|----------------------------|---------------|---------------------------------|--------|
| Lecture Attendance<br>(1 Pt each)        | 5 Pts           | Exercise 1<br>(see rubric) | 15 Pts        | Desk Crit Goals<br>(3 Pts each) | 15 Pts |
| Desk Critique Participation (2 Pts each) | 10 Pts          | Exercise 2<br>(see rubric) | 20 Pts        | Final Project<br>(see rubric)   | 35 Pts |

#### **VII. Course Policies**

Netiquette for Remote Learning

"<u>Netiquette</u>" is network etiquette. Here are some good (and essential) <u>Netiquette Guidelines</u> that you are expected to follow.

- Communication Expectations
- Class Withdrawal Policy
- Academic Integrity
- Diversity Statement
- Disability Statement
- Third-Party Tools

See information regarding the accessibility and the privacy of the third-party tool used in this course (zoom) by reading their statements: <u>https://zoom.us/accessibility</u> and <u>https://zoom.us/privacy</u>.

#### • Copyrights

The course content-related files were created to be used in compliance with the <u>TEACH Act. 17 USC.</u> <u>\$110(2)</u> and may be <u>subject to copyright protection</u>. Refer to the information provided in each file for copyright information. When in doubt, reach out to your professor.

#### VIII. Student Support Resources

- Technical Support
- Additional Resources
  Visit our Canvas Homepage > Student Resources Page for more resources available to you.

#### IX. Course Schedule

| Week | Day       | What  | Where & When              | To-Do (before class)                                 | Assessment  |
|------|-----------|---|---------------------------|--|---|
| 1    | Tue. 6/8  | Course Intro,<br>Food & IARC                          | Zoom<br>10:20am - 12:25pm | Get familiar with<br>Canvas and with the<br>Syllabus | Attendance  |
|      | Thu. 6/10 | Home Kitchens<br>(Exercise 1 Prompt)                  | Zoom<br>10:20am - 12:25pm | Reading 1 (Canvas)                                   | Attendance +<br>Exercise 1 due on<br>6/13, by 11:59 PM              |
| 2    | Tue. 6/15 | Cultural Approach to<br>Design<br>(Exercise 2 Prompt) | Zoom<br>10:20am - 12:25pm | Reading 2 (Canvas)                                   | Attendance  |
|      | Thu. 6/17 | Individual Desk Crit<br>(Ex. 2)                       | Zoom<br>by schedule       | Sign-up for Desk Crit<br>(Canvas)                    | Desk Crit Participation +<br>Exercise 2 due on<br>6/20, by 11:59 PM |

| Week       | Day       | What   | Where & When              | To-Do (before class)  | Assessment   |  |
|------------|-----------|--|---------------------------|---|--|--|
| 3          | Tue. 6/22 | Mod. 2 Intro,<br>Kitchen Program<br>(Project Prompt)                           | Zoom<br>10:20am - 12:25pm | Watch Video Lectures 1<br>(Mod. 1 Feedback) and 2<br>(Floor Plan)   | Attendance   |  |
|            | Thu. 6/24 | Layout and Styles  | On your own               | Watch Video Lectures<br>3 (Layout) and 4 (Styles)   | 4)   |  |
| 4 Tue. 6/2 |           | Individual Desk Crit<br>(Layout)   | Zoom<br>by schedule       | Sign-up for Desk Crit<br>(Canvas) and work on your<br>project   | Desk Crit Participation                            |  |
|            | Thu. 7/1  | Flooring and Ceiling,<br>Color and Lighting                                    | On your own               | Watch Video Lectures<br>5 (Flooring and Ceiling)<br>and 6 (Color and Lighting)<br>+ Start a Concept Board                     | -  |  |
| Week       | Day       | What   | Where & When              | To-Do (before class)  | Assessment   |  |
| 5          | Tue. 7/6  | Individual Desk Crit<br>(Concept Board +<br>Cabinetry and Hardware)            | Zoom<br>by schedule       | Watch Video Lectures 7<br>(Cabinetry), 8 (Hardware), and<br>Sign-up for Desk Crit (Canvas                                     | Desk Crit<br>Participation                         |  |
|            | Thu. 7/8  | Individual Desk Crit<br>(Countertops and<br>Backsplashes<br>Sinks and Faucets) | Zoom<br>by schedule       | Watch Video Lectures<br>9 (Countertops and<br>Backsplashes), 10 (Sinks and<br>Faucets), and Sign-up for Desl<br>Crit (Canvas) | Desk Crit<br>Participation<br>k                    |  |
| 6          | Tue. 7/13 | Individual Desk Crit<br>(Project Presentation)                                 | Zoom<br>by schedule       | Watch Video Lectures 9 and 10 (Project Presentation)  | Desk Crit<br>Participation                         |  |
|            | Thu. 7/15 | Project Presentations  | Zoom<br>10:20am - 12:25pm | Work on your project presentation   | Attendance,<br>Project due on<br>6/14, by 11:59 PM |  |

**NOTE: This document is subject to change.** Please, make sure you always have <u>the most updated version</u>, which will be available on Canvas.
# **Official Rules**

Last Updated / Effective Date January 14, 2021

# SPONSOR

The 2019-2021 Sub-Zero and Wolf Kitchen Design Contest (the "Contest") is sponsored by Sub-Zero Group, Inc. 4717 Hammersley Rd., Madison, WI 53711 (the "Sponsor"), manufacturer of Sub-Zero®, and Wolf® brand appliances.

# ELIGIBILITY

Employees and immediate family members of the Sponsor, its affiliates (including distributors and dealers), and current judges or members of their firms are not eligible and are prohibited from entering the Contest.

Professional Categories: The Contest's Professional Categories are open to professional kitchen designers, architects, residential designers, interior designers, builders, remodelers, landscape designers and landscape architects only. For all Professional Categories, the design and construction of the project must have been completed in 2019, 2020, or 2021. Entrants may submit more than one entry in the various Professional Categories.

Student Category: The Contest's Student Category is open to students currently enrolled at an accredited college or university. Entries from students graduating before January 31, 2022 will be accepted only if their projects are completed and graded by their professors prior to graduation. The Student Category is limited to one entry per entrant.

There is no purchase necessary to enter or win. Sponsor reserves the sole right to determine eligibility.

Prohibitions on Eligibility. We cannot accept entries from persons located in or projects based in Iran, North Korea, Sudan, or Syria, or in any country which is subsequently added to the United States List of State Sponsors of Terrorism during the Contest period. We cannot accept entries for any person or entity listed on the U.S. Department of Commerce's Denied Persons List, the U.S. Department of Treasury's Blocked Persons List,

the Specialty Designated Nationals List or a debarred person by the U.S. Department of Defense.

# ENTRY REQUIREMENTS

Contest entries must be submitted online at <u>subzero-wolf.com/contest</u>. The Contest closes January 31, 2022. Entries must be received by 11:59 p.m. Central Time on January 31, 2022 in order to be eligible.

Entrants must register for an account and be logged in to submit an entry. If an entrant is under the age of 18 or the age of majority in their residence as applicable, his or her parent or legal guardian must create an account and be logged in to submit an entry.

Mail-in entries will not be accepted. Neither the entrant's nor his or her firm's name should appear on any submitted plans, narratives, renderings, photographs, or files. Incomplete entries will be automatically disqualified.

All entries **MUST** meet national code requirements and restrictions.

Entries must be of a private, residential space only. Showroom, retail, commercial, hospitality, public recreational, educational and other non-residential environments are not eligible.

Entries must include a minimum of three color photographs of the completed design. Finished kitchen photos cannot be computer generated images (CGI). Please try to capture as much of the kitchen as possible. We highly recommend, but do not require, at least one photograph be taken with the qualifying refrigerator unit's door open, so the Sponsor can effectively identify and validate the product model. At least one photograph must sufficiently feature the primary Sub-Zero® or Wolf® product as applicable, so the Sponsor can effectively identify and validate the product model.

Entries must include a minimum of one digital/hand drawn floor plan. Additional floor plans, elevations and perspective drawings are welcome.

## Professional categories' eligibility requirements:

Kitchen Style entries must include all of the following:

- Sub-Zero® refrigeration as primary food preservation units:
  - At least one full-size Sub-Zero® refrigeration unit; or
  - Two or more Sub-Zero® undercounter units
  - No full-size competitive refrigeration units.
  - Wine storage units do not meet the primary food preservation unit requirement.
- At least one Wolf® cooking appliance as primary food preparation unit. Ranges, rangetops, ovens, cooktops, or two or more modules meet this requirement. Ventilation, microwave ovens and warming drawers do not.

**Small Space Kitchen** entries must meet all of the Kitchen Style entry requirements (listed above), plus the following:

• The kitchen's space must total 175 square feet or less.

**Emerging Professional** entries must meet all of the Kitchen Style entry requirements (listed above), plus the following:

- Entrant must verify that he or she is 30 years old or younger as of the date of entry. Upon the Sponsor's request, the Entrant must provide proof of age via a government issued identification.
- The kitchen's space may total more or less than 175 square feet.

**First-Time Entrant** entries must meet all of the Kitchen Style entry requirements (listed above), plus the following:

• Entrant cannot have entered any Sub-Zero, and/or Wolf Kitchen Design Contest in the past.

**Best Use Outside of Kitchen** entries must meet all of the following requirements in one room or designated space:

- Appliances:
  - At least one full-size Sub-Zero® refrigeration/wine unit, OR two or more Sub-Zero® undercounter units (no full-size competitive units are allowed within the room/space); or
  - At least one Wolf® oven, cooktop, range, rangetop or outdoor grill, OR two or more Wolf® units including module cooktops, coffee systems, microwaves, vacuum seal/warming drawers, ventilation or side burners; or
  - One Sub-Zero® refrigeration/wine unit and one Wolf® unit, in each case, of any size (no full-size competitive refrigeration/wine units are allowed within the room/space).
- The room/space cannot be designated as a primary or secondary indoor kitchen.
- Examples of qualifying spaces include but are not limited to outdoor kitchen, patio, pool house, master bedroom, media room, home office, wine cellar or bar.

## Student category eligibility requirements:

- The Contest's Student category is open to students currently enrolled at an accredited college or university.
- Projects must be completed by an individual student, not several students on a team. No co-designers are permitted.
- Let your imagination be your guide in designing a functional and beautiful space for a hypothetical client. Entrants are to create an indoor kitchen with a minimum of 175 square feet and a budget of \$200,000. Please provide interesting details about the hypothetical client and any unique situations or design challenges encountered.
- Student entries must include:
  - Rendered kitchen with all of the following:
    - At least one full-size Sub-Zero® refrigeration unit or two or more Sub-Zero® undercounter units (and no full-size competitive refrigeration units).
    - At least one Wolf® cooking appliance as primary food preparation unit. Ranges, rangetops, ovens, cooktops and two or more modules meet this requirement. Ventilation, microwave ovens and warming drawers do not.

# JUDGING

The Contest is judged by a panel of esteemed professionals from the architectural, interior design and kitchen design disciplines from around the world. All votes and decisions of the panel are final.

Judges evaluate all qualifying entries on the following three criteria:

- Best function and aesthetic use of Sub-Zero®, and Wolf® brand appliances
- Aesthetically-pleasing overall kitchen design
- Functionality of overall kitchen design

A fourth aspect is applied to the First-Time Entrant category during the judging process. In addition to the three aspects listed above, the judges will take into consideration which of the kitchen designs is the most surprising, fascinating, out-of-the-box, and has a deep conviction to its vision.

# PRIZES

## EXCEPT WHERE PROHIBITED BY LAW, IN ORDER TO BE ELIGIBLE FOR PRIZES, EACH ENTRANT SELECTED AS A WINNER MUST SIGN A RELEASE IN THE FORM REQUESTED BY THE SPONSOR GRANTING CERTAIN RIGHTS (INCLUDING A COPYRIGHT LICENSE) IN THE MATERIALS AND PHOTOS SUBMITTED WITH HIS OR HER ENTRY.

## **Global Winners:**

- 1. 1st Place Traditional Kitchen Design winner \$35,000
- 2. 1st Place Transitional Kitchen Design winner \$35,000
- 3. 1st Place Contemporary Kitchen Design winner \$35,000
- 4. 2nd Place Traditional Kitchen Design winner \$20,000
- 5. 2nd Place Transitional Kitchen Design winner \$20,000
- 6. 2nd Place Contemporary Kitchen Design winner \$20,000
- 7. 3rd Place Traditional Kitchen Design winner \$10,000
- 8. 3rd Place Transitional Kitchen Design winner \$10,000
- 9. 3rd Place Contemporary Kitchen Design winner \$10,000
- 10. Small Space Kitchen winner \$5,000 (1 prize)
- 11. Emerging Professional winner \$5,000 (1 prize)
- 12. First-Time Entrant winner \$5,000 (1 prize)
- 13. Best Use Outside of Kitchen winner \$5,000 (1 prize)
- 14. Student winner \$5,000 (1 prize)
- 15. Each Professional Finalist \$2,000 (29 prizes)

All federal, state, local, municipal, income and other taxes (if any) are the sole responsibility of the winner. Cash prizes are subject to withholding and cannot be awarded until the winner provides the Sponsor with a W-9 form or equivalent if acceptable to Sponsor.

Cash prizes won by teams are normally distributed to the primary entrant designated on the entry form. However, Sponsor reserves the right to distribute prizes to any team member in its sole discretion.

Each of the twenty nine Professional Finalists and the Student Winner will be awarded a **trip for two** (primary entrant and <u>one</u> guest only, even in the case of teams) to the Summit & Gala, which is currently planned for the Fall of 2022 ("Trip Prize"). Approximate retail value of each Trip Prize is \$3,500 (\$7,000 if the Trip Prize Winner brings a guest).

## Total value of all prizes is approximately \$600,000 (USD)

Odds of winning a prize depend on the number of eligible entries received. Sponsor reserves the right to award fewer prizes than listed in these rules if the quality or quantity of submissions are insufficient.

Trip Prize Information: Guests must be 18 years of age or older. No exceptions. The Trip Prize consists of (a) two (2) round-trip coach class tickets for air transportation from the major airport located closest to the winner's home to the location of the Summit & Gala, (b) hotel accommodations for 3 nights (one room, double-occupancy); and (c) ground transportation to and from the hotel and to sponsored events (additional ground transportation costs are at winners expense). The actual value of the Trip Prize is expected to vary, based on the point of origination, airfare fluctuations, and hotel pricing. If the actual value of the travel portion of the Trip Prize is less than stated, the difference will not be awarded in cash, and no such claim will be honored. If the hotel, airfare, or rental car exceeds the maximum value listed, Trip Prize Winner will be responsible for any excess costs or fees. If the Trip Prize Winner resides within 200 miles of the travel destination, alternate travel arrangements may be made by Sponsor at its sole discretion and the value of the Trip Prize may be adjusted accordingly. Trip must be scheduled through Sponsor's designated agent. Sponsor will determine airline, flight and hotel itineraries in its sole discretion. Airline carrier's regulations and conditions apply. Trip may not be combined with any other offer and travel may not qualify for frequent flyer miles. Guest of Trip Prize Winner must travel with Trip Prize Winner on same itinerary. Travel must originate from and end at the same airport. Sponsor will not be responsible for changes in schedule of any element of the Trip Prize, and will not be liable for any expenses resulting from flight cancellation/delay. The Trip Prize Winner and guest must possess any necessary valid travel documents (i.e., valid government-issued photo ID; passport) in order to travel. A Trip Prize winner and his/her travel companion are solely responsible for determining and obtaining all necessary travel documents and other travel requirements. In the event Trip Prize winner has no quest accompany him/her on the trip, the Trip Prize will be awarded in increments appropriate for the actual number of travelers and Trip Prize winner will not receive any compensation for such substitution. All expenses associated with Trip Prize travel package not specifically described above will be the sole responsibility of the winner and of his/her travel companions, including without limitation, fuel, tips, incidentals and food and beverages.

Sponsor will not be responsible for acts of God, acts of terrorism, pandemics, civil disturbances, work stoppage or any other natural or man-made disaster outside their control that may cause the cancellation or postponement of the Trip Prize. Trip Prize winner and guest may wish to obtain travel insurance (or other forms of insurance) at their own expense and hereby acknowledge that the Sponsor has not and will not obtain or provide travel insurance or any other form of insurance. The Trip Prize is non-assignable and nontransferable. Sponsor reserves the right to substitute a prize of equal or greater value. The Trip Prize Winners are solely responsible for payment of all federal, state and local taxes on the prize value awarded and for all costs and expenses not specified herein

and other expenses incurred by accepting the merchandise prize is the sole responsibility of the winner.

# GENERAL CONDITIONS

The Contest is void where prohibited or restricted by law.

By entering, Entrants warrant that: (1) their entry is their original concept; (2) they are authorized by the owner of the design to enter the design in the Contest; and (3) the design does not infringe the intellectual property rights of any third party.

Entrants or their firms, as applicable, retain ownership of all design ideas submitted in the Contest. However, by submitting designs and materials in the Contest, entrants irrevocably grant to Sponsor a fully paid-up, worldwide, assignable license to use and reproduce the submitted materials and derivations thereof in all media for all purposes relating to the Contest (including future versions of the Contest) or advertising or promotion of Sponsor or its brands, including but not limited to in print ads and on the Sub-Zero and Wolf website relating to any awards the design professional wins.

Entrants grant the Sponsor permission to contact them using the contact information provided on the contest entry form, including via electronic messages (such as email and text).

Sponsor is not responsible for any expenses incurred by entrants in connection with their participation in the Contest and will not return any materials submitted in the Contest.

Sponsor reserves the right to remove any entry information or comments from the Contest web page that it deems objectionable, obscene or inappropriate for public use.

The Contest may be terminated by the Sponsor at any time in its sole discretion.

Each entrant shall indemnify and hold harmless the Sponsor, its affiliates, assigns, and their agents and employees, against liability should any third-party claim that the use by the Sponsor, its affiliates, assigns, and/or their agents or employees of materials submitted by such entrant violates any right of such third party with respect to the materials.

Participation in the Contest constitutes an agreement by each entrant, including all members of a team in the case of a team entry, to be bound by these Official Contest Rules. By entering the Contest, entrants agree that these Official Contest Rules will not be construed for or against a party based on his, her or its level of participation in the drafting of these Official Contest Rules.

Sponsor assumes no responsibility for any problems or technical malfunction of any telephone network or lines, computer systems, servers, software, Internet service provider, or e-mail systems; failure of any entry to be received on account of technical problems, or incomplete, late, lost, damaged, illegible or misdirected electronic communications; or any combination thereof, including damage to entrants' or anyone else's computer equipment related to or resulting from participation in downloading of any materials in this Contest.

Sponsor reserves the right to disqualify persons found tampering with or otherwise abusing any aspect of this Contest as determined by Sponsor in its sole discretion.

By entering the Contest, each entrant agrees that (a) any and all disputes, claims and causes of action arising out of or in connection with the Contest, or any prizes awarded, shall be resolved individually without resort to any form of class action and shall be filed

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# Ideating Fit- A Pedagogical Approach in Developing a Symbiotic Relationship Among Form, Function, and Context

William Biss, Chatham University

## ABSTRACT

Introduction Ideating Fit is a pedagogical approach in developing a harmonious fit among interior form, interior function and existing architectural context. While referencing the work of Christian Norberg-Schulz's Elements of Existential Space, Kevin Lynch's Elements of Urban Imageability and Roberto Rengel's Interior Place Elements, this approach to Ideation is an exercise in ensuring a symbiotic fit among interior organizational concepts and existing architectural context. When applied, student work consistently exemplifies a more formally and functionally balanced scheme when compared to traditional blocking diagrams. Problem: This approach to organizational concept development addresses one of the biggest challenges for beginning design students; how do we transition from adjacency matrices and bubble diagrams, which are programmatic and function focused, to creating a formally interesting scheme within an existing context? Typically, student solutions reflect a literal transposition of the bubble diagram into the context or "packing" a blocking diagram into the context. Both of these strategies result in a functionally heavy concept development phase where bubbles and/or blocks become rooms followed by students overcompensating with arbitrary formal strategies in an attempt to generate interest in the design. Intent: The intention behind this process is to give beginning design students a more methodical design process when transitioning from programmatic diagrams to formal/organizational diagramming within a context. Introducing students to a process of formally analyzing the existing context to produce a network of regulating lines to then be used as guides creates a well-balanced organizational scheme as a starting point for further plan development and improves the quality of successful design potentials through ideation. This approach also mitigates inclinations to "overcorrect" block

plans by adding random formal elements for the sake of interest, innovation, etc. Process: Students are introduced to theoretical place concepts from Christian Norberg-Schulz's Elements of Existential Space, Kevin Lynch's Elements of Urban Imageability and Roberto Rengel's Interior Place Elements. Focusing specifically on Rengel's 5 Interior Place Elements, students are given a series of base-drawing templates each with differing contextual shapes: squares, medium rectangle, large rectangle. Each set of context has a distilled "program" which the students are required to Ideate diagrammatic solutions for. For example, within the square context, develop an organizational concept diagram for: 2 Domains, 1 Center, 1 Arrival Space, 1 Path and 1 Node. Students are then given a 4 step process to follow: Step 1 – Perform a formal analysis by establish regulating lines of the existing context. (create a contextual grid to work from) Step 2 – Define the Parti by establishing points of arrival(s), primary path of circulation and the center(s). (design space how we experience space...arrive, circulate, destination) Step 3 - Define Domains - secondary realms of space. (the space left over) Step 4 - Graphically enhance the diagram to communicate a hierarchy of relationships. Conclusion: Replacing traditional blocking diagrams with the 4 step Ideation process above has proven to be a success at addressing one of the biggest challenge's students face early in their education and in the design process. The search for a proper fit with a proper balance of form, function and context. Student work exemplifies an ability to ideate/develop multiple responses to a design prompt. The ability to achieve a balance among form and function. The ability to achieve a symbiotic fit or relationship among the proposed interior concept and the existing architectural context and lastly, the ability to graphically communicate hierarchical relationships. The aforementioned have a positive impact on the student's success through plan development and schematic design.

### REFERENCES

Christian Norberg-Schulz, Elements of Existential Space

Kevin Lynch, Elements of Urban Imageability

Roberto Rengel, Interior Place Elements

# The challenge!

# How do we get from this?

To this?



# diagrammatic conversion

Through Ideation we "distill" our programmatic diagrams down to the corresponding 5 Interior Place Elements.



How many points of arrival? How many nodes? How many Domains? How many Centers?

# Conceptualize - 5 Place Elements (parts to whole)



# Conceptualize - 5 Place Elements (parts to whole)



# Conceptualize - 5 Place Elements (parts to whole)



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# **Reflexive and Reflective Scales of Reasoning**

Shai Yeshayahu, Ryerson University

### ABSTRACT

RELEVANCE: Relaxing zoning rules for developers, city planners, realtors, and even interior designers pursuing special interests continue to generate stress on the limits of dimensional logic. Spatial designers that circumscribe to building codes and spacing guidelines deemed measuring metrics fundamental to solving design problems that impact human inhabitance. This dichotomy is most prevalent when speculators in the 21st-century advocate for living standards that compress humans into 18 sq. ft. closet homes in Hong Kong, 200 sq. ft. micro-homes in Los Angeles, or 76 sq. ft. micro-compact homes in Munich. Decreased spatial dimensions according to a renters subsistence stands in contrast with a series of environmental concerns [Urist 2020] and The World Health Organization- Housing and Health Guidelines [WHO 2018] that declared spatial crowding a detrimental effect on health and in amplifying the spread of infectious diseases. TEACHING ISSUE: Understanding human scale as a tool to imagine spatial futures has increased urgency. Without regard for dimensional limits, when tweaking spatial square footage, as many do, what interpretive rationales would stop interior designers from developing unhealthy spaces? To what extent will shrinking sizes defy or augment humans' accessibility and range of mobility? Additionally, now that drawing is in front of screens and students stare with fixed gaze to their "open" windows, hardly even noticing the spatial dimensions of their own bodies, how will dimensional notations and scale transfers be taught and learned? Does inquire about the human dimension at the core of a foundational curriculum for interior designers matter?. CONTEXT: Human measurements are complex. From Vitruvius [27 BCE] and L'uomo Vitruviano [1490] to Neufert Architects' Data [1936] and the Modulor [1948], Dreyfuss Associates [1974] learned to identified missing data for the physically impaired, aging, and gender diverse humans. The anthropometric data of the Architectural Graphics Standards followed suit, and from 1981 onward, the perception of human-scale standards changed. Still, challenges remain vivid, as Caroline Criado Perez explained in Invisible women: Exposing data

bias in a world designed for men [2019]. And according to Joel Sanders' MixDesign team [2020], who explores alternate dimensions for the inclusivity of non-compliant bodies. METHOD: In teaching, we often overlook the differences inherent in the processes of describing-documenting and investigating-understanding. In 1984 when Jerome Bruner began his explorations of cognitive function, he proposed a narrative mode of learning that hinged on the ability to explain what one knows through the trajectories undertaken to achieve this knowledge. That premise inspired an observational and representational technique that empowers autobiographical reasoning. Starting with measuring tools, students record their bodies and annotate numerical data while cataloging, organizing, and translating measurements. Data entries turn into sketches, drawings, drafting documents, 3d scanning, and 3d-printing. The work's totality provides personal insights and the dimensional renditions necessary to shift from 2D to 3D. Additionally, reflexive and reflective reasoning ignites a student's ability to ideate and simulate space from a personalized view affording each student an acute awareness about the dimensional limits of their design ideas. OUTCOMES: Design educators and students continuously explore human's exertion in space. However, the profound experience of selfawareness gained by measuring, documenting, and mapping your own body to develop and depict a personalized narrative as a way of knowing and grasping the meaning of space suggests a theory for teaching interior design within a rhetorical framework. This presentation will convey students' understanding of body-awareness utilizing their n narrating skills to explain a design thinking praxis in defining space.

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Sanders, Joel, and Susan Stryker. "Stalled: Gender-neutral public bathrooms." South Atlantic Quarterly 115, no. 4 (2016): 779-788.

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# Media Explorations: Sensory Representations

Michelle Pannone, Marywood University

### ABSTRACT

Through the course of the design process, an architect is tasked with conveying their design intent to a variety of actors requiring specific forms of representation. From presentations showcasing the design to diverse audiences to the technical plans, sections, and details needed for construction, the designer must be well versed in representation methodologies to address each of these stakeholders. The site, structural requirements, and the spatial needs of the application can themselves, almost programmatically, guide an architect to a solution that meets the most direct needs of their design. However, how much does this consider the people within that future space? On paper or in modeling, a space only often exists in three-dimensions, but people experience space beyond three-dimensions, and not only with our eyes, but rather including atmospheric qualities that are understood through the engagement of the totality of our senses. With our eyes, our ears, our sense of touch, and our emotions, we experience spaces not in a fixed static state, but in a reality where all of our senses and feelings are experienced across time; architecture is not only a spatial art, but also a temporal art, and that you must consider not just the space but also the movement within it (Zumthor 29-41). Understanding how the space lives and responds with time, the experience of the space rather than the space itself, is to truly understand how to design impactfully, rather than to just draw spaces to fulfill linear roles. In teaching students to design considering sensory and emotional experience, there is no rigid formula or piece of software that produces on its own the types of ideas for the unique needs of each user or program. Students must learn to understand a set of predetermined parameters and how to approach it using methods that cannot always be derived from steadfast rules or linear coordinates. Rather, students must leverage an ability to empathize with potential users and understand that their designs deliver not only a three-dimensional space, but also a variety of sensual experiences across time. This presentation examines a research methodology, used in an interior architecture studio, where students investigate sensory experiences to better understand

their delivery of interior encounters within an adaptive reuse project. Specifically, students were tasked with creating an institute based on a study area (chado, anemology, orology, ichthyology, etc.) they had chosen to research, and during this particular phase of their design process they were tasked with applying their research to the design of an interior space framed as a sensory encounter. The students were asked to reflect on how they were conveying their expertise of their investigative topic through sensory encounters, how architectonic elements form the interior spaces that supported those experiences, and what representational techniques were needed to convey the atmospheric qualities of the interior. The learnings from this thought process was fundamental in transforming the students' perspective of their institute from a building that exclusively housed artifacts and administrative needs into an experiential journey of the diverse user groups, profoundly impacting their final designs.

### REFERENCES

Zumthor, Peter. Atmospheres. Germany: Birkhäuser, 2006.









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# Focal Glow, Ambient Luminescence & Play of Brilliants- Case Study Using 3D Software to Teach Lighting Design Principles

Jake Tucci, University of Arkansas Fayetteville

### ABSTRACT

"Lighting leads a person instinctively through a space, and it controls what a person sees or does not see. It can quickly and simply change the atmosphere of a space and how a person feels while in it." Benya, M.K.C.S.J. R. (2017). Lighting Design Basics. [VitalSource Bookshelf]. When interior design students take a lighting design course, ensuring that they can apply their learning in their studio is most important. As instructors strive to train students to make informed and instinctive decisions about color, form, human scale, sustainability and wellbeing -"layers of light" should be included as an equally important applied skill in design studios. A successful lighting course covers a broad range of topics including psychology of lighting, daylighting strategies, lamp and fixture type, creating Reflected Ceiling Plans, studying precedents and sustainability. The most challenging component is application. Project based and active learning increase retention and embolden students to independently apply lighting design methods in future projects. This case study showcases a project designed to help students apply the foundational principle "Layers of Light" in the context of a large lecture-based lighting design course (70+ students). The project asks students to apply the "Layers of Light" design approach in a digital software. The project is placed at the midpoint of the semester, after students have been introduced to lighting design terminology, theories and methods of application. Students develop a lighting scheme within Autodesk Revit, that incorporates the "Three Forms of Lightplay" coined by the lighting designer Richard Kelly: Ambient Light, Focal Glow and Display of Brilliance. Both lighting techniques and development of material finishes are be employed. Teaching light design strategies using digital software served two functions: and it offered the most direct way for students to apply and test lighting schemes in their own studio

projects, since most student work is designed and presented with digital tools, and was easily accessible to a large class. Students were provided a realistic, yet conceptual hotel lobby created in Revit by the instructor. Students experiment with: 1. Daylight, Nighttime and Twilight lighting conditions – absent of electric light 2. Ambient electric light – hidden fixtures only, such as cove lighting. 3. Focal Glow and Display of Brilliance – visible fixtures, such as pendants and recessed fixtures. 4. Large and small surface area material finishes. To minimize technical difficulties throughout the process, the students were provided with a "kit of parts". The Revit model included multiple architectural details for cove lighting and recessed fixtures. The blank white canvas model included all interior trim, casework and furniture. Students chose from a curated collection of commercial fixtures. The 3D models and spec sheets were provided. The "kit of parts" approach encouraged experimentation and quick iteration, minimizing "analysis paralysis". Students produced renderings at every stage of development and interim reviews were held by both the instructor and the TA's. The project has run two consecutive years. The first year, students used Revit or 3D Max to render and the second Revit or V-Ray (plugin for Revit). Overall, the project demonstrated how to develop an attractive interior lighting scheme by applying the principle of "Layers of light" using digital tools; incorporated dynamic lighting design into their overall design process workflow and built additional advanced visual communication skills along the way. The quality of work was driven by each student's work ethic and personal drive, leading to a range of impressive work to barely acceptable. The majority students displayed a satisfactory level of understanding and application. This presentation will include two years of student work and an additional light fixture projects using Autodesk Revit.

#### REFERENCES

Karlen, M., Spangler, C., & Benya, J. R. (2017). Lighting Design Basics (3rd Edition). Wiley Professional Development (P&T).

Kelly, R. (1952). Lighting as an Integral Part of Architecture. College Art Journal, 12(1), 24–30. https://doi.org/10.2307/773361 Tregenza, P., & Loe, D. (2013). The Design of Lighting (2nd Edition). Taylor & Francis.

### Assignment 4 & 5 – Digital Interior Lighting –

### Beginner & Intermediate Lighting Schemes using V-Ray for Revit



**Objective** – To apply the "Layers of Light" lighting design approach in a 3D Digital Program (Revit with V-Ray plugin). As each student learns new skills, you will develop a lighting scheme that incorporates, **Ambient Light, Focal Glow and Display of Brilliance**. Both lighting techniques and material development will be employed.

Assignment 4 is a beginner's level exercise to learn the fundamentals. Assignment 5 will build on basics skills, requiring students to experiment with different daylight and electric lighting compositions in a "conceptualized" hotel lobby. The instructor will provide a "kit of parts" for students to build upon.

#### So Why 3DS Max? (Spring 2020)

- 3DS Max can import most 3D applications, including Revit, Rhino and Sketchup.
- Can become your primary renderer no matter what program the model was created in.
- It accepts already applied Revit materials and lighting fixtures.
- Gives you far more control of lighting and material application than Revit.
- You can render to Autodesk's 360 Cloud at high resolutions with short wait times.
- It's Free! (For students).

#### So Why Revit with V-Ray Plugin? (Spring 2021)

- A plug in that works for many 3D software including Revit, Rhino and Sketchup.
- Can become your primary renderer no matter what program the model was created in.
- It accepts already applied Revit materials and lighting fixtures.
- Gives you far more control of lighting and material application than Revit.
- Produces better lighting effects and quality than the default renderer in Revit.
- $\checkmark$  You can continue to model in Revit while rendering with V-Ray.

#### Consider:

- How daylight will "wash" out artificial light.
- How daylight quality changes throughout the day.
- Using artificial light to brighten dark areas that daylight doesn't reach.
- o How non-uniform lighting will add interest.
- o How floating light fixtures add to the display of brilliance, sparkle and emphasize (or de-emphasize) the ceiling plane.
- o How recessed cove lighting and backlighting adds visual interest and emphasize silhouettes and edges.
- o Adjusting exposure to showcase both daylight and interior artificial lighting.
- o How a combination of matte, satin, semi-gloss and gloss materials add visual interest and interplay of light.
- How the camera view can show depth of space, rather than a shallow closeup shot.

#### **Directions:**

All project steps will be introduced during the class session with step-by-step demonstration. *Please note that all directions listed below are supplements to the instruction, explanations and homework discussed in class.* 

#### o Day 0 - Prep

- Download V-Ray for Autodesk Revit.
- Open and verify V-Ray and Revit is working properly.

#### • Day 1 – Beginner Daylighting (Tues)

- Refresher on the interface.
- Creating a Camera (Perspective view)
- Setting up sun parameters.
- Rendering locally and in the 360 Cloud.
- Basic Material application.

#### Assignment: Render Two images at different times of day (sun locations.

- Use the settings for resolution and quality (Medium) mentioned in class.
- You may use either "V-RAY sun" or "Dome Light".
- Adjust the exposure that creates a bright interior, but not "blown out".
- Add and/or adjust background image to match the sun light and location.
- Use "Render Production" to render and save rendered image.
- When you use "Render Production", the light quality will look better than during interactive.
- After the rendering is complete, you can do postprocessing via the "show corrections control" on the bottom left of the render window or using photoshop.

#### • Day 2 – Beginner Artificial Light 1 (Thurs)

- Adding "artificial" light sources.
- Glowing Materials (Recessed and Cove lighting).
- Basic Material creating and editing.

#### Assignment: Submit one Medium or High-quality rendering. (Final rendering should use "Render Production")

- You may render at the default resolution or bump it up to 1200 pixels across for a bigger more detailed rendering. (NOT required to increase resolution size)
- Set sun (or dome light) to a morning **OR** evening lighting condition.
- $\circ$   $\quad$  Modify the camera angle slightly to make it your own.
- Add all layers of artificial light demonstrated in class
- Pendant lights with spots aiming down and glowing light bulb
- Cove lighting along the top of the wall.
- o Recess lighting in the reveal at the base of the wall.
- Fire in the fireplace. (Photoshop this in if you have issues with this.)
- Swap out some of the materials from Revit with V-ray materials as demonstrated in class.
- You can choose different materials of your choice.
- You can also swap out the sofa material.
- Turn on bloom during the rendering process and adjust post exposure as you see fit to adjust the image.

#### Day 3 – Intermediate Daylighting (Tues)

- Setting Sun and Cartesian locations in Revit/V-Ray
- Rendering different times of day.

# Assignment: Place all required components in to one PDF document.

- One page that includes a minimal of three inspiration images - hospitality or related interiors with lighting and/or materials that you find attractive.
- One page with two V-Ray Renderings of Hotel Lobby. (The views can be from different angles)
  - Morning Light
  - o Evening Light

#### • Day 4 – Intermediate Artificial Lighting 1 (Tues)

- Fixing basic lights in Revit that "don't work".
- Creating advanced glowing materials.
- Adding glowing materials to surfaces to simulate cove and recessed lighting effects.

#### Assignment: Complete the following in your Revit model:

- Adjust Sun or Dome light to look like sun setting or right after the sun has set.
- Adjust the exposure.
- Fix the recessed can lights. (Change light to spotlight, rotate upward and move up to work correctly)
- Adjust brightness of recessed lights.
- Make a series of glowing materials starting with a Plastic material assets.
- Apply glowing materials to any and all of the opportunities to create interesting glowing effects.
- Render at medium quality and submit image as your assignment.

#### Day 5 – Intermediate Artificial Lighting 2 (Thurs)

- Advanced Light Fixtures 2
- Advanced Materials 2

#### \* Assignment: Complete the following in your Revit model:

- A single rendering that continues with the evening lighting scheme.
- Add decorative pendant lights provided or of your own choice from BIMobjects.com.
  - You should be creative with the placement and variety of pendant lighting.
  - You do NOT need to use all of the provided choices.
  - $\,\circ\,$  Use lighting to define spatial and seating zones.
- Continue to refine your material choices for furniture and interior architecture.
- Continue to refine hidden lighting (glowing materials).

#### • Day 6 – Intermediate Artificial Lighting 2 (Tues)

- Advanced Light Fixtures 3
- Advanced Materials 3

#### \* Assignment: Complete the following in your Revit model:

- Continue to refine and add materials.
- Strategically swap out some Revit materials with V-Ray materials that add interest, like fabric, metals, surfaces etc.
- o Refine lighting settings and glowing materials
- Continue to refine placement and visual aesthetics of decorative pendants light.
- Submit ONE Rendering.

#### ○ Day 7 – Digital Pinup (Thurs)

Pinup/Workday

#### \* Assignment:

o Continue to refine Revit model.

#### ○ Day 8 – Digital Pinup (Tues)

Workday

#### \* Assignment:

• Submit ONE final rendering of high quality.

Day 9 – Final Rendering Due (Thurs 12:30PM)

## STUDENT WORK - SPRING 2021



















STUDENT WORK - SPRING 2020





















## PROCESS - ADDITIONAL SUPPORT IMAGES



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# Empowering Presentation Skills of Interior Design Students in a Virtual Environment

Maha Salman, Yorkville University Reem Habib, Yorkville University Maryam Karimi, Yorkville University

## ABSTRACT

The pandemic of Covid19 has imposed restrictions on physical gatherings and recent technologies emerged in use as a way of communication. Whether through Zoom or any other platform, scholars, entrepreneurs, and students would share a screen, and rely on their voice, pitch, and rhythm, to deliver their ideas while triggering and maintaining the audience's interest and engagement. Through this format - for the past year and a half and more than ever university students put emphasis on strengthening their presentation skills, verbally and graphically while body language has almost disappeared. Albert Mehrabian, a pioneer researcher of body language in the 1950's, found that the total impact of a message is about 7% verbal (words) and 38% vocal (including tone of voice, inflection, and other sounds) and 55% nonverbal (Pease and Pease, 2006). With the lack of eye contact, body language and movement, what other means do students have to implement in their presentation to inform, persuade, interact with their audience, and most importantly leave a mark? Does this mean that the oral presentation now is primarily (Vocal) where body language is non-existent with the "new normal" in a virtual environment? To what extent does this affect students in conducting a successful presentation in an interior design studio? What are the new skills an Interior Design program should implement to increase competency in communicating ideas and presentations? To answer these questions, this research targets areas of investigations linked to efficiency in oral presentation as a foundational skill in Interior Design education. Gilles Deleuze and Felix Guattari (1987) define Rhizome as models that follow a smooth/ nomadic system of growth and proliferation. They flow horizontally to establish map-like structures with many entries and exit

points. Such models defy grand narratives and dominant organizational regimes to probe relations, attractions, and impacts rather than definitive origins or genesis. For these presentation events, students are encouraged to follow a similar model of thinking through investigating different disciplines. Through using literature review and survey as research methods, this study explored implementing PechaKucha techniques in design studios to train students on how to deliver their concepts and build confidence. The survey conducted in University X targeted interior design students in senior years presenting their design projects via zoom to explore their experiences and challenges. The focus has been on helping students with their presentation skills and also building a virtual collaborative environment for them to share their ideas and present design projects. Students' responses indicated that with the use Infographics, diagrams and very minimal text, they enjoyed the presentation to peers. While it was daunting for some students to present the work within limited slides and timeframe (20 slides X 20 seconds/each), others found that the preparation for the presentation allowed them to include all info and respect the time allocated. Most students were comfortable and excited, while some student showed anxiety and unease in presenting virtually; accordingly they asked for more integration of presentation skills within the courses and public speaking training. Majority of the participants confirmed the importance of the oral presentation in the Interior design education and mentioned that they are ready for questions after the presentation. This endorses the importance of developing presentation techniques as part of the coursework while shedding a spotlight on the interior design education and the correlation with other disciplines as public speaking and visual communications. In a virtual environment, it is essential to create a full package for a successful delivery of students' design ideas where they learn to look at the world in dynamic and relational terms in order to build an interdisciplinary framework.

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#### **Design Studios Virtual Presentations- Experience Survey**

This survey aims to explore interior design students' experiences and challenges with **Remote Synchronous Delivery (RSD**) via zoom during COVID 19. The focus has been on helping students with their presentation skills and also building a virtual collaborative environment for them to share their ideas and develop present design projects.

This survey is anonymous; it will take 5-10 minutes. Thanks in advance for your participation. By submitting this survey, you are giving the authors consent to use the results for research purposes.

#### SECTION 1: INTRODUCTORY QUESTIONS:

#### 1. Please indicate your age range:

- a. 18–25
- b. 26–33
- c. 34 -41
- d. 42–49
- e. 50+

#### 2. How many courses you are taking this term?

- a. 1-2
- b. 3-4
- c. 5+

#### 3. Describe your course load this term compared to your usual load?

- d. The same
- e. More
- f. Less

#### 4. Are an international or domestic student?

- a. Domestic
- b. International

#### 5. What is your academic background?

- a. Yorkville University is the first University that I attend
- b. I have a bachelor's Degree in a related field
- c. I have a bachelor's degree in another field
- d. I have a graduate Degree in a related field
- e. I have a graduate degree in another field
- f. I have some postgraduate training but I have not obtained a degree

#### 6. Are you currently employed:

- g. I am working in a related field of design
- h. I am working in an unrelated field of practice
- i. I am only focusing on school work
#### SECTION 2: REMOTE SYNCHRONOUS DELIVERY (RSD) EXPERIENCE

| 7. Please indicate your answer by placing a check mark between brackets   |                   |       |         |          |                      |  |  |  |  |  |  |  |  |
|---|-------------------|-------|---------|----------|----------------------|--|--|--|--|--|--|--|--|
|   | Strongly<br>Agree | Agree | Neutral | Disagree | Strongly<br>Disagree |  |  |  |  |  |  |  |  |
| Synchronous classroom<br>environment via zoom is more<br>productive than physical classroom<br>environment  | ()                | ()    | ()      | ()       | ()                   |  |  |  |  |  |  |  |  |
| Synchronous classroom method of<br>delivery allows for interaction<br>between professors and students<br>like the physical classroom                | ()                | ()    | ()      | ()       | ()                   |  |  |  |  |  |  |  |  |
| Synchronous classroom via zoom<br>can provide opportunities to<br>engage students in class<br>discussions with their peers                          | ()                | ( )   | ()      | ()       | ()                   |  |  |  |  |  |  |  |  |
| As an interior design student, you<br>prefer having synchronous<br>classroom via zoom than attending<br>physical classroom after COVID 19<br>crisis | ()                | ( )   | ( )     | ()       | ()                   |  |  |  |  |  |  |  |  |

8. As an interior design student please indicate how do you evaluate synchronous delivery model via zoom experience? (Please select all that apply)

- ( ) Allowed for a balance between education and part time jobs
- ( ) Enhanced your scheduling and time management abilities
- ( ) Affected negatively your ability to connect and engage with peers and professors
- ( ) Decreased sense of alienation and language barrier
- ( ) None
- () Others, Please specify

9. As an interior design student, which of the provided responses describes the influence of synchronous zoom education on your mental health during COVID 19? (Please select all that apply)

| ( ) I feel I am more focused  |  |
|---|--|
| ( ) Ease of access from home decreased level of stress and pressure |  |
| ( ) Anxiety over amount of work and assignments deadline            |  |
| ( ) Increased feeling of lethargy and fatigue                       |  |
| ( ) Increased feeling of loneliness isolation                       |  |
| ( ) None  |  |
| ( ) Other, Please Specify   |  |
|   |  |
|   |  |
|   |  |
|   |  |
|   |  |

#### **SECTION 3- Design Studios Presentations -Pecha Kucha**

10. Which of the below responses describe(s) your experience after participating in the presentations? (Please select all that apply)

( ) I found it a daunting task to present my research topic to my peers especially at the time that I was still working on my ideas.

() The short presentation format pushed me to distill my ideas which helped me clarify my main topics.

() I thought I successfully presented my topic to my peers.

( ) I needed more time to further describe my intentions.

( ) I found it difficult to connect to other peers through zoom as I prefer in person presentations.

() Zoom presentations lack physical gestures, body movements, and eye contact which makes it difficult for me to focus and follow the narratives.

( ) The 20 X20 format of Pecha Kucha presentations worked very well as I got to show images and share my narrative.

( ) I prefer virtual presentations to other ones as they are usually less stressful.

#### 11. Did you find similar project to yours in today's presentations?

( ) Yes – Other students were looking into similar research issues that I have already considered for my project.

( ) Yes- I came across new research topics that could inform my project.

() No – I did not find any similarities between my work and others.

( ) No – but I got inspired to hear about other projects to find connections with my own.

( ) After listening to the presentations I am determined to collaborate with other students to build the research component of my design project.

**Rationale:** 

# 12. What types of visuals did you use during your presentation in order to compose a visual narrative? ( ) Maps ( ) Diagrams ( ) Precedents in Interior Design ( ) Precedents in Architecture ( ) Works of Art ( ) Other. Specify

#### 13. What is your methodology for an interdisciplinary research framework?

() I look into recent scientific research on global warming and climate change to present an ethical design solution for my project.

( ) Specific issues of social justice inform the main ideas of my research and inspire the theme of my thesis project.

( ) My interests in philosophy adds an investigative layer to the way I envision my thesis work.

( ) The recent discourses on psychology informs my research topic.

( ) My former academic background influences my practice in interior design. Through the course of this thesis, I intent to link my former training to the ideas I am pursuing for this project.

( ) Other. Specify 14. What are the other challenges you face as a student during the COVID 19 situation that were not addressed in the survey? (Optional)

Thanks for your participation

Scholarship of Teaching and Learning | Pedagogy | Presentation

# Sites of Learning: Co-Creative Spaces in (the) Making

Keena Suh, Pratt Insitute

## ABSTRACT

This collaborative and multi-disciplinary design project is a model partnership that includes students and educators at high school and college levels, artists, designers, and fabricators in a socially-engaged design process that addresses equity of access and opportunities in art and design. The project explores how partnerships among students and educators at different levels and including diverse voices and areas of professional expertise can create more inclusive environments that respect diverse communities as well as diverse pathways of learning. Sites of Learning are as much in the dialogue and reflections upon emotional and perceived cultural boundaries as much as designed physical spaces. Students at college-level design schools do not often have the opportunity to engage directly with a variety of interdisciplinary collaborators in their academic studies, typically responding to a brief designing for a client and scenario rather than with a team and in direct response to and within the palpable energies of the given site. In this course, offered both as a studio and as an interdisciplinary elective, college-level design students collaborated with students and staff at a local high school to reimagine the interiors of their existing school library. The partner school for this project is a Title 1 Transfer high school which supports a student base that is lower-income, a diverse group of people who have a vast array of life experiences and backgrounds. The co-creative approach engaged high school students, teachers, and staff directly in the design process throughout the semester. High school students were encouraged to join the design class and share their thoughts about their learning environments, share their work from art class, and also provide feedback to the design students. Not only was this an opportunity to share their creative artwork with a broader audience outside the high school, but the high school students were bouyed by the encouragement they received. These conversations and insights were integral to the interior design project concepts. The high

school students' sketches and paintings, for example, were translated into textiles that operated both as a form of display as well as a partitioning system, the students' artwork transforming their own spaces. Through the two iterations of this course, the collaborative process has expanded robustly. A partnership of artists and fabricators had been working with the high school students in conducting workshops in natural dyes, weaving, and other forms of making. In the current version of this course, these artists, designers, and fabricators have joined as collaborators and are integral to the project, having helped shape the curriculum and designing and running the workshops shared by all students. A series of hands-on workshops, in person and online, introduce a variety of materials, crafts, tools, and processes, such as needle felting, hand woodworking, and digital fabrication. The shared languages of making become the landscapes of collaboration, shared sites of learning. This evolving partnership seeks to expand opportunities not only for all collaborators to learn from empathy-building and perspective-broadening contexts but for the younger students to understand that pursuing art and design are viable options for their futures and as paths for creative self-expression, building upon their personal interests and talents that may not have been recognized or encouraged to explore. Creative pursuits or careers in design are not always made obvious nor deemed accessible, due to lack of confidence, awareness, or resources. The college-level design students had the opportunity to expand their learning environment not only to off campus contexts but interact directly with people from diverse communities with whom they may have had very limited interpersonal connections.

#### REFERENCES

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Comments posted on **Discord** site by the high school librarian after a progress pin up of interior design students' work during the semester.

Discord is a platform the high school students and teachers were familiar with which our course adopted as an open channel for communication among all students, instructors, and the librarian.

#### 🔦 🚽 🖈 🥝 🖻

Hello! I was so inspired and delighted by the presentations I saw last week! I loved the focus on student psychological needs and the care you are taking to incorporate them into the library space. The idea of movable furniture makes so much sense. I would love to have that kind of flexibility. your attention to the demographics of the school and neighborhood really interested me. Even though the students don't usually live in the area we are very much a part of the neighborhood. I am so interested to see what you will do with the poetry concept. am inspired by the idea of the library as a space/studio for self expression. There is a lot of possibility there and it reflects some of the collaboration ideas and I have discussed. I like that you focus on the idea of the library as a space for autonomy and self development. The incorporation of Manga colors and textures into library space is really exciting and the students would be very into it. I wish I had seen more of the presentations but please know how exciting and inspiring your ideas are! Thank you and please feel free to contact me if you have any questions.

The names of the design students referenced by the high school librarian have been redacted for this submission.

One high school student during class suggested partitions in the new design could be:

#### The wall of "the future"

The wall of "hope"

#### The "wall of art!"

where students can leave comments in different languages and leave positive comments and inspirational words.

These ideas were inspirations for the interior design students and incorporated into the design proposals.



FRONT VIEW

Sites of Learning



SIDE VIEW











The high school students' artwork (above) created in their art class became essential "materials" and inspirations for the interior design students' design proposals.



Study showing how high school students' artwork can be translated into printed textiles that form a flexible partition system that also showcases the artwork. Overlapping panels create an evolving palimpsest of creative voices.

The high school students experience their own work continually transforming their learning environments.



Sites of Learning

"We are committed to removing systemic barriers to, and shifting power dynamics within, our fields of craft and design. These industries are often exclusive, cost prohibitive, and expect a certain baseline skill level, social network, or resources for entry. We believe that being well-networked and having financial wealth should not be preconditions to thrive and, therefore, hope to share knowledge and concrete skills with all who seek them."

-from a project partner's mission statement



Scholarship of Teaching and Learning | Pedagogy | Presentation

# Teaching During a Pandemic Using the Liquid Modernity Theory

Mia Kile, University of Oklahoma

## ABSTRACT

The theory of liquid modernity, developed by Zygmunt Bauman, posits that the current nature of our lives is fluid and in constant flux (Sarid, 2017). Bauman's view that to be viable in this new sociocultural climate, education must break traditional orthodox epistemology and embrace this new paradigm (Bauman, 2005). This philosophy is in contrast to conventional perspectives shared by educational theorists such as John Dewey and Michel Foucault, in which education is structured and centered on traditions of pedagogical beliefs that embrace the exchange of ideas through multi-experiences and multimodal practices, as well as the appreciation of diversity and active participation of all typically occurring in face to face settings (Kricke & Neubert, 2017). One could argue that interior design education follows the traditional route in that the studio culture is centered on the similar foundations which require long-term thinking and planning (i.e., implementing accreditation standards). However, COVID-19 uncovered many challenges which required many design educators to reevaluate their traditional delivery methods and adopt new strategies. These changes happened instantaneously without long-term thinking or planning. The traditional on campus experience moved almost overnight to virtual delivery. Technology played a vital role in shaping these temporal environments. While the pandemic brought many challenges, it also presented many opportunities as progress and staying connected were facilitated by technology. With reports of over 300 million daily meeting participants on the ZOOM app in May 2020, virtual meetings and social media platforms enabled communication (Doyle & Conboy, 2020). Embracing the theory of liquid modernity, this presentation highlights the outcomes of a virtually delivered synchronous sophomore level interior design studio taught during the height of the pandemic. The lens in which this work is viewed is through the social phenomenon of living in a liquid modern society in which we are seeking to understand the

methods used to navigate a world where public and private lives, which were once separated, are now merged. The ethnographic research approach is two-fold in this body of work. The first considers the students within the class. As the class was held virtually, we were exposed to the lives outside of the traditional studio classroom which in some cases occurred in a bedroom, kitchen, living room, and on the patio. The second ethnographic aspect relates to the studio project which focused on the development of an early childhood education center aimed to enhance the early learning experiences for all young children, including those from low-income households and those with disabilities, and develop the knowledge and skills necessary for academic success. The physical environment in which students learn should be welcoming, safe and support social interactions and academic learning. The environment should also be supportive of the educators as they play a fundamental role in nurturing and supporting children's development and learning within the educational settings. While these considerations align with traditional educational theories, students were encouraged to consider how the environment might be enhanced to address issues posed by the pandemic. Because this studio has outcome objectives which align with our national accreditation and because we are being mindful of safe pandemic protocol, the presentations are in the form of digital presentation boards. The outcomes from this studio experience are numerous to include the opportunity to have guests join the virtual studio from afar. This would not be possible in the face-to-face platform due to the expense and time associated with travel. While the pandemic is ever present, strategies from the theory of liquid modernity can be used to inform future studio experiences.

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# EARLY CHILDHOOD EDUCATION CENTER-PROJECT BRIEF

**Interior Design Studio** 

# **Project Brief: Early Childhood Education Center**

#### ABOUT:

Early educational experiences are formative for building the foundation of future academic learning and success for young children (Barnett 1993; U.S. Department of Education, Health and Human Services 2015). School programs should enhance the early learning experiences for all young children, including those from low-income households and those with disabilities, and develop the knowledge and skills necessary for academic success when they enter formal school environments (Burchinal et al. 2010).

The quality of teacher-child interactions is particularly important because of direct links with children's educational outcomes (Mashburn et al. 2008). Children who have positive educational experiences which fosters social and academic learning to include reciprocal interactions with their teachers and classmates make greater academic and social gains than their peers who do not have the same educational experience (Pianta et al. 2005).

The physical environment in which students learn is also of great importance. Educational settings should be welcoming, safe and support social interactions and academic learning. In addition to supporting the student needs, the environment should be supportive of the educators as they play a fundamental role in nurturing and supporting children's development and learning in within the educational settings.

#### THE PROJECT:

This project asks students to consider teachers health and well-being in the design for an Early Childhood Education (ECE) center located in **Example 1**. Given approximately 5000 square feet to work within a provided core and shell building, students were asked to develop the west wing within the building in which to house four different classroom settings, public restrooms, a break room, common areas, and other support areas deemed feasible based on their research. This was a conceptual project and as such was developed through the design development phase in which student conceptual designs were formalized resulting in a presentation to early childhood educators and administrators.

Because this studio has outcome objectives which align with our national accreditation and because we are being mindful of safe pandemic protocol, the presentations are in the form of digital presentation boards. This is unlike a slide presentation. Student work was organized on the boards like what would typically be in a traditional face to face presentation.

#### **PRESENTATIONS TO INCLUDE:**

Floor plans for all spaces with square footage and maximum occupancy Furniture layouts and considerations Lighting considerations Life Safety- Circulation Accessibility to include American with Disabilities Act (ADA) guidelines Furniture, Fixtures and Equipment selection Material / Finishes selections 3-D Rendered models of key select space

#### PROJECTS WERE EVALUATED ON THE FOLLOWING CRITERIA:

**Global Context:** Did the design solution address global views and consider social, cultural, economic, and ecological contexts?

#### Interior Design Studio

Human-Centered Design: Did the student apply knowledge of human experience and behavior to the design of the interior environment of the center?

Design Process: Employed all aspects of the design process to creatively solve the design challenge.

**Communication:** Effective communication both visually and verbally through project presentation and documentation.

**Light and Color:** Applied the principles and theories of light and color effectively in relation to environmental impact and human wellbeing.

**Products and Materials:** Design solutions integrate furnishings, products, materials, and finishes. Appropriately selected and applied manufactured products and custom design elements to a design solution. Considered the multiple properties of products and materials as well as their aesthetic contribution and appropriate use for the given location / space in which they are installed.

**Environmental Systems and Comfort:** Demonstrates an understanding of the principles of acoustics, thermal comfort, and indoor air quality in relation to environmental impact and human wellbeing.

**Construction:** Solutions shows an understanding of interior construction and its interrelationship with base building construction and systems.

**Regulations and Guidelines:** Project addresses the laws, codes, standards, and guidelines that impact human experience of interior spaces.

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# Student Project for Sustainable and Energy Efficient Residential Buildings

Juntae Jake Son, Ball State University

## ABSTRACT

The sustainable and energy-efficient interior design course engages about 50 undergraduate students in the Interior Design program in a coordinated program of research, hands-on immersive learning in home energy assessment tools and techniques, and curriculum development. It will supplement students' understanding of energy efficiency assessment and analysis in residential buildings as well as students' knowledge of renewable energy solutions and their application in a residential setting. The project also assists a community partner by providing analytical reports of real-world demonstration homes that evaluate and suggest improvements for more efficient home energy consumption to benefit current and future homeowners and builders in the community. In the previous studies, Interior Design students suffer difficulties with the energy concept and green building design as well as the students and educators have not sufficiently communicated energy-related concepts (Goldring & Osborne, 1994; Ruff & Olson, 2009). Many students have knowledge of sustainable methods and products to design residential and commercial projects (Ruff & Olson, 2009), but they are not aware much of how energy works in the built environment. In addition, the instruction with examples of sustainable projects is not sufficient to teach energy-related concepts to the students (McKeown, Hopkins, Rizi, & Chrystalbridge, 2002). This limitation may result in Interior Design students not being able to perform properly environmentally friendly design in green building projects. Therefore, this project challenges undergraduates to master specific energy assessment knowledge, skills, and tools and engage in real-world opportunities to assess building energy systems in residential settings. Students can actively discuss and determine the methods to test energy efficiency and conduct energy assessments in a total of five single- and/or multi-family homes, processes that include airtightness, heating and cooling, and ventilation; they can develop the contact and format of summary reports for each home and determine the most effective method of presenting the final energy assessment analysis to the community partner and homeowners/caretakers. Following initial instruction by the faculty, each team can develop a plan detailing how to conduct the initial site visit to its home. This visit will prepare the homeowner/caretaker for the energy assessment; they will discuss project goals, energy testing procedures, and strategies, setting the client at ease with the overall process. The community partner facilitates opportunities for students to perform the home assessment in different types of constructions in the community. Students are exposed to a variety of home types (e.g., singlestory/multi-story construction, older/newer construction, different building materials, different building techniques, etc.) as well as interact with residents coming from a variety of socioeconomic backgrounds. Finding ways to adapt as needed to these technical and social variables will allow students the opportunity to engage in diverse settings that mimic their future professional experience. This project will prepare the ground for the development of a recurring annual course offering for students in the Interior Design program, helping the faculties to develop and enhance the course content based on the assessments' technical results, student learning assessments, student feedback, and feedback from the community partner. The project also will enable participating students to develop new technical knowledge, improve their ability to work successfully with institutional and individual clients in a professional manner, improve study and work habits, and broaden their knowledge and experience to compete in a future job market.

#### REFERENCES

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**2022 IDEC Annual Conference Abstract Submission (Scholarship of Teaching and Learning - Practice)** The Course for Sustainable & Energy Efficient Residences

## Appendix



Image 1: Students tour homes in a community near the campus



Image 2: Tools that students used: Thermal Camera

**2022 IDEC Annual Conference Abstract Submission (Scholarship of Teaching and Learning - Practice)** The Course for Sustainable & Energy Efficient Residences



Image 3: Tools that students used: Light Meter



Image 4: Tools that students used: Measuring Tape

**2022 IDEC Annual Conference Abstract Submission (Scholarship of Teaching and Learning - Practice)** The Course for Sustainable & Energy Efficient Residences



Image 5: Tools that students used: Blower Door Test Kit

Scholarship of Teaching and Learning | Practice | Presentation

# Student Success and Placement: A Look at Student Experiences During Their Internship Pre and Post Pandemic

Melanie Duffey, Auburn University

## ABSTRACT

In an ongoing longitudinal study (Duffey & Gale, in progress) from 2007 to 2019 of student perceptions (N=293) of their internship experience there is compelling data that students value personal interaction the most over any other experience during their internship. Few studies in interior design have examined student work experiences in the last 15 years, and those that have been conducted have focused mostly on practitioners' perspectives (Fishburne, 2015; Gale, Duffey, Park-Gates, & Peek, 2017). Lack of academic studies on student perspectives is alarming when considering internships aid in career preparedness, because internships can enhance student learning while helping students feel more prepared for practice (Tarver, 2013). In 2020 when the global pandemic hit, internship programs and providers had to adapt and change, and experiences for the intern and workplace changed. Therefore, this study aims to address this gap in literature by using grounded theory to investigate internship experiences from the interior design students' viewpoint. Specifically, seeking to determine experiences students found valuable and understanding students' expectations as we recover from the pandemic. A survey asked 2020 interns (N=38) following their internship open ended questions to describe their three most valuable internship experiences and in 2020 also followed up with asking to list three challenges they faced with their 2020 internship experience. The data for the 2020 summer interns (N=38) revealed that the interns most valued experiences remained the same as the previous 12 years of data, personal interaction with clients, colleagues, vendor and product reps. However, that interaction was achieved differently (often virtually), and it was less frequent in comparison to previous years (2007 - 2019), which is to be expected. Student response to that change revealed overall dissatisfaction with the experience and pointed to reduced out of office

experiences as the reason for dissatisfaction. Supporting that out of office experiences are perceived as beneficial in the student's viewpoint. Furthermore, students revealed their dissatisfaction with job placement and taking positions unpaid or in a sector not previously considered. Demonstrating that while students have placement, a common measure of student success, placement may not be the only factor to consider and other areas as satisfaction, quality of internship, and compensation should be measured. Finally, students also revealed, for the first time in 12 years, that the majority (38%) of the 2020 cohort found positions in residential design versus the previous years where commercial and hospitality design led in this data set. These findings reveal the overall student perception of 2020 in comparison to over a decade of data, and offer some insights toward curriculum planning, assessment, quality enhancement planning, and future of student preparedness.

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| Sector             | 2018  | 2019  | 2020  |
|--------------------|-------|-------|-------|
| Commercial Design  | 32.5% | 42.1% | 14.3% |
| Educational Design | 8.1%  | 2.6%  | 4.8%  |
| Healthcare Design  | 8.1%  | 10.5% | 9.5%  |
| Hospitality Design | 24.3% | 13.2% | 9.5%  |
| Residential Design | 21.6% | 21.1% | 38.1% |
| Retail Design      | 5.4%  | 10.5% | 14.3% |
| Graduate School    | n/a   | n/a   | 9.5%  |

Figure 1: Demonstrating increase in residential design in 2020.



Figure 2: Example of coded data (2007)



Figure 3: Example of coded data (2012)

|   | STUDENT CODE - 2020 |           |       |       |       |    |           |      |       |      |      |       |      |       | 110    | 1     |        |        |     |       |      |             |     |        |         |       |        |      |
|---|---------------------|-----------|-------|-------|-------|----|-----------|------|-------|------|------|-------|------|-------|--------|-------|--------|--------|-----|-------|------|-------------|-----|--------|---------|-------|--------|------|
|   | A                   | в         | c     | D     | E     | F  | G         | н    | 1     | 1    | к    | L     | м    | N     | 0      | P     | q      | R      | 5   | Ť     | U    | v           | w   | x      | Y       | z     | TOTALS | N=26 |
| moetings  | 1                   |           |       | 1.1   | 1     |    | 1         |      |       |      | 1    | 1.0.0 | 1    | 1     | 1      |       | 1      |        |     | 1.000 | 1    | 1 1         | 1   | 1      | 1       |       | 4      |      |
| Out of office experiences                                 |                     |           | 1     | 1     | -     |    |           |      |       |      |      |       | 1    |       |        |       |        |        |     |       | 1    | -           |     | 1      |         |       | 0      |      |
| * site visits   | 1                   | B - D - D | 2     |       |       |    |           |      | 1     |      | 1    |       | 1    | 1     |        |       | 1      | a      |     | 1     | 1    | 6           |     | 1      | 10.00   |       | 5      |      |
| installs  |                     | 1         |       |       |       | 1  |           | 1    |       |      |      |       |      |       |        |       | 1      |        |     | 1     |      |             | 1   | 1      |         | -     | 5      |      |
| C showrooms   | 1                   |           | 2 = 1 |       | 1     |    | 5.11      |      |       |      | 1    |       |      |       | 1.     |       | -      |        |     |       | 1    | 1           | 1   | 1000   | 1       |       | 2      |      |
| Technology  | Ś                   | 1         |       |       |       |    |           |      |       | 1    |      |       | 1    | 1     | 1      |       |        |        |     | 1     |      |             |     |        |         |       | 6      |      |
| Specific project  | 1                   | 1.1.1     | 2     | 1     | 1     |    | 4         |      | 1.1   |      | 1 3  |       | 1.1  |       |        | 1     |        | 1.1.1. |     | 1.    |      | 1           |     | 11.00  |         |       | 1      |      |
| Specific topic/task                                       | 1                   |           | 2     | 1     | 1     | 1  | 1         | -    | 1     | 1    |      |       |      |       |        | 2     | -      | -      | -   |       |      | 1.000       |     | 1      |         |       | 7      |      |
| hids  |                     | 1.72      | 1     | 1.7   | 1.    |    | 1.27      |      |       |      | 1000 | 2 - 2 | -    |       |        |       |        | 1.12   | 1   | 2     | 1    |             |     | 17. 25 | Sec. 46 |       | 0      |      |
| pricing/budget  |                     | 1.1       | 1     | 1122  | 1     |    | V = 1     |      | 1.1.1 |      | 1    |       | 1    | 1     | 1      | 1     |        |        | 1   |       | 1    | 1           |     | 1752   | 1       | -     | 4      |      |
| cds.  |                     | 1000      | =     | 1     | 5.2.1 |    | 6-14      |      |       |      |      | 1     | 1.00 |       | 11     | -     | 1      | 222    |     | 2 === | 1.82 | · · · · · · |     | C = 0  | 122.3   | 1.1.1 | 0      |      |
| specification/finishes                                    |                     |           | -     |       | 1     | 1  | -         | 1    | -     |      |      | 1     | 1    |       | 1      |       |        |        |     |       | 1    | 1           |     | 1      | -       | 1     | 6      |      |
| design process  |                     |           |       | D. 0  |       |    | 1.        |      |       | 1    |      | 1     |      | 1     | 1      |       |        |        | . 7 |       | R    |             | 1   | 1. 8   | 1.1     |       | 1      |      |
|   |                     |           |       |       |       |    |           |      |       |      |      |       |      |       |        |       |        |        |     |       |      |             |     |        |         |       | 0      |      |
| Notes:  | -                   | 1         |       |       |       |    |           | E    | 10.00 | -    | F    | 0     |      |       |        | 1     | 17 mil |        |     |       | 1    | I:          | 1   | L      |         | L     | 0      |      |
| Mentoring Theme   |                     |           |       | 1     | 1     |    | $0 \le 0$ |      | 12.5  | -    | 2.25 | 5     | -    |       | 11     | 12.54 |        | 204    |     | 5 T   | 1    |             | 1   | Y      | 12.15   |       | 0      |      |
| Work/Life Balance theme                                   |                     |           | 2 1   | 1     |       | 1  | 1777      | 1. 1 | 100   |      | 1.00 | 1 - 1 | 01   |       |        | 100   | 12 11  | 1.2.4  |     |       | 1    | -           | 1   | 1.000  | 1000    | 1     | 0      |      |
| Networking  |                     |           | _     |       | 1 1   |    | 1.1       | 1    | 1.1   |      |      | 0.11  | 3    |       |        |       |        |        |     |       |      | 5 6         | 1.  |        | 1.0     |       | 1      |      |
| Independence "own project"                                | 1                   |           |       |       |       |    | 1         | 1    |       |      | 1.   |       | 1    | 1     |        |       | 1      |        | 1   |       |      | 1           |     |        | 1       |       | 6      |      |
| Business understanding                                    | 1                   | 1         | 1     |       | 1     | 1  | 1         |      |       |      |      | 1     |      | 1     |        |       |        | 1      |     |       |      | C           |     |        |         | - 1   | 8      |      |
| Personal development / skills                             | 1                   |           |       | 1     | 1.1   | 1  | 1.1       |      |       |      | 1    | 1     | 01   |       | 1. 1   | 1     |        |        | 13  |       | 1    |             |     | 2      | 1       |       | 1      |      |
| Communication with contractors/clients                    | -                   | 1         | 1     | 1     | 1     |    | U 11 - 1  | 1    |       | -    |      | )     | 1.   | 1 - 1 |        |       | 1.0.0  | 1.0.1  |     |       |      | 1           | 1 1 | 00     | 1       | 1     | 4      |      |
|   | -                   |           |       | 1 - 1 | 1-1   | 11 | 6.00      |      | 27.2  | 1000 | 1.75 | 1 2   | 44   | 1100  | 11 - 1 | 1721  |        | 2.2.2  | 1   | a     | 1-2  | 1.11        | 0   | 6      | 100     |       | 0      | 1    |
|   | -                   |           |       |       |       |    | 1         |      |       |      | 1    | 1     |      |       |        |       |        |        |     |       |      |             |     | -      |         |       | 0      |      |
| COVID changes   | 100                 |           |       |       |       |    |           |      |       |      |      |       |      |       |        |       |        |        |     |       |      |             |     | _      |         |       |        |      |
| No change   |                     |           |       |       |       |    | 1         | 1    | 1     | 1    | 1    | 1     |      |       |        |       | 1      |        |     |       |      |             |     |        |         |       |        |      |
| Client interaction changed - less than anticpated         |                     |           |       | 1     |       |    |           |      |       |      |      |       |      |       |        | 1     |        |        |     |       |      |             |     |        |         |       | 1      | 1    |
| Change in how business is conducted                       | 1                   |           |       |       |       | 1  | 1         |      |       |      |      |       |      | 1     |        |       |        |        |     |       |      | 1           | 1   | 1      |         |       |        |      |
| No Site visits or wanted more visits                      |                     |           |       | 1     |       |    |           |      |       |      |      |       |      |       |        | 1     |        |        |     | 1     | 1    |             |     |        | 1       | 1     | 1      |      |
| Lack of work  | 1.00                | 1         | 1     |       |       | 1  |           |      |       |      |      | 1     | 1    |       | 1      |       |        |        |     |       |      |             |     |        | 1       |       |        | 1    |
| Broken Communciation - employee/employer / Lack of collab | oration             |           |       |       | 1     |    |           |      |       |      |      |       |      |       |        |       |        |        |     |       |      |             |     | 1      | 1       | 1     |        |      |
| dissastified with availabel jobs                          |                     |           |       |       | 100   |    | 1         |      |       |      |      | 1     | 1    |       | 1      |       |        | 1      | 1   |       |      |             |     |        |         |       | 1      |      |

Figure 4: Example of coded data (2020)

## Scholarship of Teaching and Learning | Social & Environmental | Presentation

## **Biophilia and Places of Worship**

Sarah Angne Alfaro, Ball State University Sherif Attalah, Ball State University

### ABSTRACT

Sustainable design is a three-pronged approach that focuses on environment, economy, and society. Biophilia, a theory of sustainability, holds that humans possess an innate tendency to seek connections with nature and other forms of life and seeks to improve the health and wellbeing of building occupants by strengthening connections to Mother Nature. Biophilic design is proven to reduce stress, enhance creativity and clarity of thought, improve our well-being, and expedite healing. As humans seek outlets for stress and to find peace, these benefits become ever more important; however, research has yet to examine two questions: 1. What effects can biophilia have in places of worship, where people come to perform acts of devotion, study religion, meet with friends, family, and community? 2. How can religious beliefs, aesthetic choices, and the economic and technological capacity of those who create or worship in these spaces be transformed through an incorporation of nature? This presentation highlights the value of two fields uniting to further nature-based design. Two professors from two disciplines: Interior Design and Construction Management designed a course for their students hinged on the value of nature in the built environment. By focusing on the design and impact of two diverse sacred spaces, an Islamic Center and a Methodist church, students learned about sustainable efficiencies for the two community partners. Through observations at the two sites the students surveyed both buildings for existing biophilia (i.e. use of natural dynamic/diffused light, blurring boundaries of indoors/outdoors, natural textures, presence of water, airflow, natural scents, scattered vegetation, plant-life, areas of refuge, etc.). Using observations and devices such as thermal cameras and light meters. Student recorded existing efficiency conditions (i.e. energy, wind, hydro, solar, people, etc.) at the sites. Students interviewed faith leaders to identify and document sustainable patterns of the building use and develop a post-occupancy measure use

while evaluating biophilic design adaptations. Comparisons were then made on how biophilic design approaches, combined with traditional design approaches, were used to reflect and support spiritual needs of worshipers in two diverse faiths. Students generated energy models for each building based on its current physical conditions and operational routines. As a result, students developed a variety of approaches to renovate the two buildings, learning from nature to focus on biophilic/sustainable techniques. Findings highlight that by incorporating biophilic design in places of worship, the connection between nature and spirituality that these spaces seek to foster is amplified. By incorporating biophilic design, building occupants feel more attracted to the space's nature-inspired adaptations while also enjoying increased monthly savings in utility costs from energy efficiency adaptations the redesign both places of worship.

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## Student Samples – Observation Sketches



### Student Sample – Post Occupancy Evaluation Content



#### **Redesign Priorities:**

#### Overall: Biophilia

- Green wall and groupings of potted plants in both entrances
- Covering the columns in the basement with stone or another natural material

2

- Stained glass and plants on the ledge near main staircase
- Window coverings in the worship space.

#### 1. Insulation in the Basement

- 2. Accessibility (exterior ramps/ interior elevator)
- 3. Air circulation/quality upstairs
- 4. More solar panels
- 5. Fixing water damaged areas
- 6. Fixing broken elements throughout
- 7. Lighting (more consistent/ better)
- 8. Wayfinding
- 9. Circulation through the children's area/ bathroom
- 10. Acoustics (prayer room but also throughout)

Other Focuses/Ideas:

History wall in entrance area

#### Student Sample – Post Occupancy Evaluation Content

#### Light Readings from CM Thermal Camera;

- Top of sanctuary- 198 lux
- Middle of sanctuary- 530 lux
- Podium- 343 lux
- First pew- 290 lux
- Last pew- 58 lux
- Narthex- 180 lux
- Pastors office- 210 lux
- Receptionists- 259 lux
- Storage closet- 330 lux
- Boiler room entrance- 50 lux
- Boiler room back section- 78 lux
- Stage area- 460 lux
- Kitchen- 200 lux
- Classrooms- 180 lux
- Classroom Hallway- 250 lux
- Custodial closet- 240 lux
- Lobby- 350 lux

#### CM first visit general notes:

- No central heat or air
- All stained glass windows were poorly insulated
- · Windows and closet in receptionist area were poorly insulated
- · Lots of drywall damage throughout the church
- · Retaining wall in the basement was crumbling (he said it was a quarter million to fix)
- · Heat draw from lamps, wiring, and switches in boiler room
- Kitchen door and windows poor insulation
- · Very old lights in almost every room, not energy efficient at all
- Window framing broken in bar room







The group of images above display problems with the insulation in common around windows but in areas such as the one in the vu more problems. From an energy saving standpoint we recommer looked at in order to save money from heating it



This group of images displayed above show hot or cold spots in various places around the church.

#### Suggestions for improving energy performance:

One of the most no able things we noticed when walking around the church was the lighting. It was extremely old and not energy efficient at all. One suggestion could be to update all the lighting to LED lights so not only is it more modern it will save them money in the long run. Another noticeable issue was the poor installation in many locations. This can be seen in the thermal images above. The areas around the window were especially bad. This is costing the church a ton of money and fixing it would be very beneficial to the church in the long run. The dry wall in lots of areas was also just cracked which could be causing the energy bill to go up. Fixing those would be beneficial too.



Student Sample – Proposed Biophilia Infused Space

EXISTING

PROPOSED

## Scholarship of Teaching and Learning | Social & Environmental | Presentation

## **Biophilic Interior Spatial Ecologies**

Kendra Ordia, University of Nebraska - Lincoln

## ABSTRACT

Biophilia, or the innate human affinity for natural systems and processes, was popularized by E.O. Wilson in his 1984 book of the same title.1 The concept of Biophilic Design was translated as a spatial approach for the built environment primarily by Steven Kellert in the mid-2000s.2 And much of the current research on psychological and physiological responses to biophilic design are based in Kaplan's Connection to Nature Theories within Environmental Psychology. A complimentary approach to nature appreciation is explored in Ecological Aesthetic Theories, and more recently in Neuroaesthetics - both less prevalent theories in research related to natureinspired interior environments. Therefore, when addressing the context of human behavior and nature connection within the interiors, an interdisciplinary approach is required for effective and creative translations as our construct of place and identity is built around cognitive and noncognitive frameworks.3 This studio project was informed by this context and posed the question: How do we reimagine biophilic interiors based on our attitude, experiences, perception, and memory of nature? The creation of spatial memories relies on perception, imagination, and sensory attentiveness. The interaction of humans and place can be expressed in cognitive, behavioral, and emotional relationships all revealing various levels of perception to understand form, function, or meaning.4 Our perceptions of space are processed through the senses and for many, the first sensory perception of space is sight. Perception does not merely stall at observations of form but extends to our emotional attachment and meaning of place. This may manifest in phenomenological (subjective) or positive (objective) approaches to concept of place in the forms of imagination and memory associations.5 Imagination also allows us to explore fascination, awe, and wonder within the context of time, scale, and reality often fusing or distorting the latter. Sensory expression mediates information and commits a place to memory as we consider aesthetics beyond visual patterns or materiality. The common expression and

interpretation of these sensory experiences are represented in the narrative dimension. This process of cognitive and non-cognitive approaches plays key parts in the role of narratives which form our culture, identities, and values serving as an expression of subjective phenomena. To develop awareness of these approaches in students' own experiences and subsequent design process, creative warm-up activities and readings to enhance observations skills, pattern recognition, and narratives (visual and written) were introduced. Sketching exercises and selfreflective mind-mapping were also performed. Students explored precedent studies of artists collaborating with nature and worked to understand how four experiential spatial typologies fit into their individual program. Pre and post-assessments were completed to understand how students' perception of nature may have shifted because of the activities and related design work. The self-reflective process and utilization of established frameworks for biophilic values, spatial strategies, immersive approaches, and messaging allowed students to filter design decisions for spatial integration that are immersive, meaningful, and express intrinsic and relational values. The warm-up activities and readings allowed them to not only be more aware of their own creative process but feel more confident in proposing original and unique designs strategies. Aspects of place-based narrative and sensory expression became crucial for creating biophilic designs that promote engagement with place and exploration of values in nature. The resulting student outcomes demonstrate an awareness and intention for designing beyond surface-level applications of biophilic design to promote experiences of interior nature to enhance connection to place, narrative, and sensory experiences.

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Stephen R. Kellert, Judith Heerwagen, and Martin Mador. Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life (Hoboken, New Jersey: John Wiley and Sons, Inc., 2008), 8.
### DESIGN STRATEGIES FOR COLLABORATING WITH NATURE

"Nature" holds many valid definitions from remote, wild landscapes to a single urban street tree. Interactions with nature are as diverse as those experiencing them. The project will utilize established frameworks and strategies to filter design decisions for spatial integration that are immersive, meaningful, and express intrinsic and relational values. The graphic below explores the interdependent approach to design strategies for immersive nature experiences:



#### A Blophilia Values: Human Attitude Towards Nature (your over-arching value)

Kellert<sup>1</sup> established a typology of human attitudes toward nature and defined nine perspectives (terms) that are relevant to the biophilia hypothesis. CHOOSE 1 that resonates with your selection place/space and desired messaging

| Term                   | Definition  | Function<br>physical sustenance and security                 |  |
|------------------------|---|--|--|
| Utilitarian            | practical and material exploitation of<br>nature                        |  |  |
| Naturalistic           | satisfaction from direct experience or<br>contact with nature           | curiosity, outdoor skills, mental/<br>physical development   |  |
| Ecologistic-scientific | systematic study of structure, function,<br>and relationship in nature  | knowledge, understanding,<br>observational skills            |  |
| Aesthetic              | physical appeal and beauty of nature                                    | inspiration, harmony, peace, security                        |  |
| Symbolic               | use of nature for metaphorical expression, language, expressive thought | communication, mental development                            |  |
| Humanistic             | strong affection, emotional attachment,<br>"love" for nature            | group bonding, sharing, cooperation, companionship           |  |
| Moralistic             | strong affinity, spiritual reverence, ethical<br>concern for nature     | order and meaning in life, kinship<br>and affiliational ties |  |
| Dominionistic          | mastery, physical control, dominance of nature                          | mechanical skills, physical prowess,<br>ability to subdue    |  |
| Negativistic           | fear, aversion, alienation from nature                                  | security, protection, safety                                 |  |

### B\_Spatial Strategies: Big Ideas to Form Space

We will review these strategies in class lecture format and you will have the slide deck to reference. These should not be foreign concepts and include things like **Object, Plane, Sequence, Light, Threshold, and Texture** 

#### C\_Immersive Strategies: Big Ideas to Experience Space

We will review some precedent approaches to these strategies in class lecture format as well as the artist/studio profile activity. These strategies can be categorized as found on your mind-map. Experience [object/surface; senses; movement], Imagination, Perceptions [interaction; associations; emotional; meaning]

#### D Message/Narrative/Story: How the Space Express Value

Visitors to the space should leave with a strong sense of messaging related to the chosen value, understand how/why the inspirational site (from the mind-map) influences the spatial experience, and begin to develop their own narrative along the installations storyline.

#### **DESIGN PROGRAM + SPACE NEEDS**

You will be creating an immensive nature-inspired interior installation in the Resonator Gallery inspired by and based on the strategies identified above. This can be a more modern museum quality type installation or an immensive nop-up instagram style museum/playground. The approach to function in each space will likely link back to your selected value and messaging.

The primary spatial typologies that work together to create the ecosystem of spatial experience are as follows [laken/from Gensler's Experience Index].

### SOCIAL, DISCOVERY, ENTERTAINMENT, ASPIRATION

In **social mode**, people's main intention is engaging with other people. Social mode is frequently combined with other modes. These spaces should support a sense of social connection and a sense of community.

In discovery mode, people do not have a concrete plan. They are often killing time between other activities, and are likely to wander. These spaces should focus less on clarity and more on inepiration, authenticity, and novelty. Users in discovery mode are the most open to the unexpected.

Entertainment mode describes the moments when people are looking to be entertained and brought away from "everyday life." Spaces designed for entertainment should employ novel and unique design features that make a memorable impact.

Aspiration mode describes the experiences through which users seek to grow, expand, or be connected to a larger purpose. Connecting users to a larger mission and purpose, and providing opportunities for personal growth and inspiration are crucial here.

All for space modes/types need to be addressed, but do not have to be equally considered (i.e., 25% each).

There should also be a minimum of 3 sensory experiences (can be nodes or integration) throughout the installation. Two of the obvious are visual and tactile...

#### EXPERIENCE MODES from Gensler's Experience Index 2017

| ::::  |  | *   |  |
|---|--|---|--|
| SOCIAL  | DISCOVERY  | ENTERTAINMENT   | ASPIRATION   |
| In social mode, people's<br>main intention is engaging<br>with other people. Social<br>mode is frequently<br>cambined with other modes. | In discovery mode, ceople<br>do not have a concrete plan.<br>They are aften killing time<br>between other activities,<br>and are likely to wander. | Entertainment mode<br>describes the moments<br>when people are looking to<br>be entertained and brought<br>away from "everycky life." | Aspiration mode describes<br>the expension through<br>which searce seek to grow,<br>expand, or be connected to<br>a larger purpose       |
| CESIGN INFLICATIONS   | DESIGN INFLICATIONS  | DESIGN INTLICATIONS   | DESIGN INPLICATIONS  |
| Press d'up a visital variatio si apactae<br>dict support sec is, colino dichi<br>and a venor of community a<br>parameteri.              | Force lines on Garay and Three on<br>Inspiration, our one city, and includy<br>Users in discovery readers for the<br>most open to the universe ad. | Souces theoremail for ensuranment<br>sheadd employ ronsland origan<br>design for any field mixer a<br>memorable model.                | Contractory cases for a larger<br>Mickin and purptice and providing<br>opport while temperature growth<br>and machine the microsoft have |
| EXAMPLES  | EXAMPLES   | EXAMPLES  | CXANDLES   |
| Group out the simple with the table<br>laws go a much that my the technology  | Browing in a vice with our reaction<br>parapease in minute sector ing are by or<br>right boothood. Willing three sectors<br>of interview the later | Giving to the measure area of<br>a line partice ranks, visiting<br>a distillant of source   | Bening a ger i stik og a viska.<br>Vaktor a glesse landmark  |

### DEAR TREE THE SIDEWALK OUTSIDE MY HOUSE

BY



2 en si malare offer copodaniles ( odek to leom des r



### **READ & LISTEN:**

- Creativity vs anxiety .
- Seven Uncommon Tips to . Keep a Creative Habit
- How to be an Explorer -• Front pages
- Nature journaling and ٠ creativity
- An Overview of • Phenomenology for the Design Disciplines
- Buildings, Beauty, and the . Brain: A Nueroscience of Architectural Experience
- Imagine a Newer World .
- Nature's Unifying Patterns

### **ACTIVITY**:

- Sound Map .
- Urban Nature Patterns .
- Creative Writing/ Poetry
- Mapping Narrative .
- Mapping Memory [in class ٠ activity]
- Mapping Observation [in . class drawing activity]









### WARM-UP ACTIVITIES (STUDENT WORK)





The goal of this activity is to provide a context of recent installations, artwork, and exploratory design related to or inspired by nature. Many of these projects utilize art to bridge the gap between science & experience. For the pre-identified designers/artists/studios, each student will create a summary page for the identified project or installation as well as one additional installation from the same designer/artists/studios that is appealing to you or expresses a unique approach to nature-inspired design. An InDesign template for submission has been provided on Canvas.

## PRECEDENT STUDIES (STUDENT WORK)







# SITE + PROCESS (STUDENT WORK)



 $\bigcirc$ 

Ophir

Section 1 Scale: 1/4" = 1'-0'

hir and face nature

you earn a badge that display



Conquer.

# **BIOPHILIC INTERIOR SPATIAL ECOLOGIES (STUDENT WORK)**